

Pg.	DESCRIPTION	SWITCH	Pg.	DEFAULT	OPEN	CLOSED
1	COVER SHEET	SW1	47	OPEN	NORMAL OPERATION	PUSH-BUTTON RESET
2	CPU A PART 1	SW2	47	OPEN	NORMAL OPERATION	NMI PUSH-BUTTON
3	CPU A PART 2					
4	CPU B PART 1	SW3-1	33	OPEN	DISABLE REMOTE CONSOLE	ENABLE REMOTE CONSOLE
5	CPU B PART 2	SW3-2	33	OPEN	USER SW 0	USER SW0
6	GTL TERMINATIONS	SW3-3	33	OPEN	USER SW 1	USER SW1
7	CNB1 P6 I/F	SW3-4	42	CLOSED	ONBOARD IDE SLAVE	ONBOARD IDE MASTER
8	CNB1 PCI 32 I/F					
9	CNB1 PCI64 I/F	SW4-1	33	OPEN	FLASH WRITE ENABLED	WRITE PROTECT FLASH
10	CNB1 MEM & PWR I/F	SW4-2	33	OPEN	FLASH BOOT	FRED
11	CNB1 CAPS & STRAPPING	SW4-3	34	OPEN	CPU GHI OPEN DRAIN	CPU GHI LOW
12	SDRAM1	SW4-4	43	OPEN	BMC FLASH WRITE ENABLE	BMC FLASH PROTECT
13	SDRAM2					
14	CSB5 LPC I/F	SW	20	CLOSED	BATTERY POWER OFF	NORMAL OPERATION
15	CSB5 PCI I/F	SW5-2	20	OPEN	NORMAL OPERATION	CLEAR CMOS
16	GIGABIT ETHERNET (PART 1)	SW5-3	28	OPEN	VIDEO FRONT/REAR BIOS CONTROL	VIDEO REAR
17	GIGABIT ETHERNET (PART 2)	SW5-4	46	OPEN	CMM BMC CONTROL	ONBOARD BMC CONTROL
18	PCI ETHERNET C					
19	10-100MB ETHERNET MUX	SW6-1	38	OPEN	ENABLE CPU 2	CPU 2 DISABLE
20	SUPER I/O (PART 1)	SW6-2	14	OPEN	CMOS NORMAL	CLEAR CMOS
21	SUPER I/O (PART 2)	SW6-3	34	OPEN	DRONE PCIRST CONTROL ENABLED	DRONE PCI RESET CONTROL DISABLED
22	FRONT PANEL CONNECTORS	SW6-4	41	OPEN	BMC POWER OVERRIDE DISABLE	BMC POWER OVERRIDE ENABLED
23	P2P BRIDGE (J1/J2)					
24	S1 ISOLATIONS (PART 1)					
25	S1 ISOLATIONS (PART 2)					
26	CPCI J1/J2 CONNECTOR					
27	CONNECTOR J4 FIBRE					
28	CONNECTOR J6 RP10					
29	PCI TERMINATIONS					
30	GIGABIT ETHERNET MUX CTRL A					
31	GIGABIT ETHERNET MUX CTRL B					
32	CONNECTOR J3.2.16 ETHERNET					
33	SYSTEM REGISTER PAL					
34	B2/B3 ARBITRATION LOGIC					
35	DC/DC CONVERTER CPU					
36	VTT, 2.5 AND 1.8 VOLTS SUPPLY					
37	SPEED STEP CONTROL					
38	CPU MISC.					
39	ITP CON & ESD STRIPS					
40	HOTSWAP/RESET CONTROL					
41	BMC CORE CPU					
42	SYS MONITOR					
43	BMC MEMORY					
44	VIDEO CONN. LEDS					
45	IOX INTERFACE					
46	ONBOARD IDE					
47	MISC. RESET CONTROL					
48	SEC. CLOCK DISTRIBUTION					
49	CLOCK DISTRIBUTION					
50	FRED/FLASH					
51	PCI VIDEO 69000					
52	REF. DESIGNATORS PAGE 1					
53	REF. DESIGNATORS PAGE 2					
54	REF. DESIGNATORS PAGE 3					

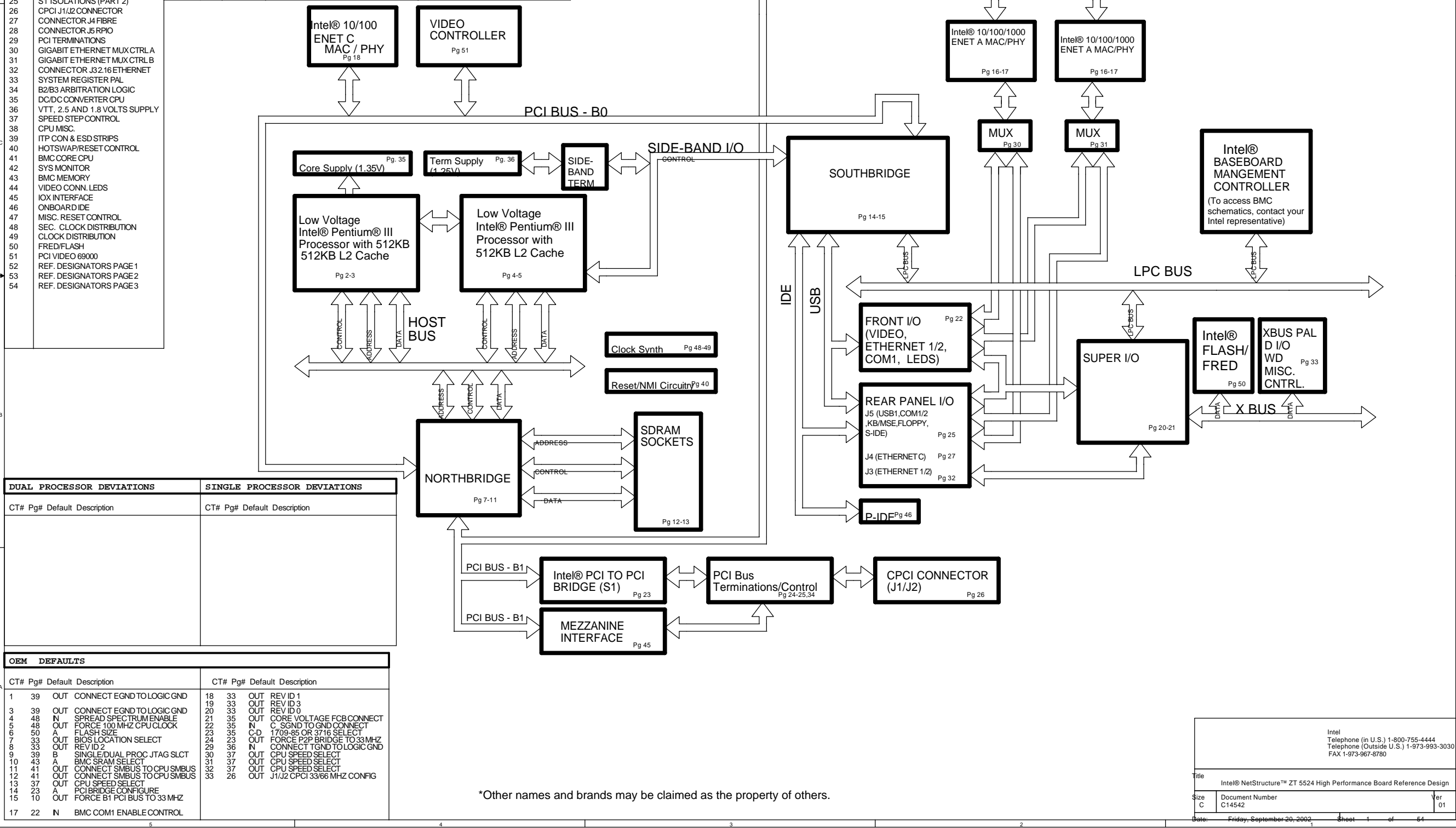
# Intel® NetStructure™

## ZT 5524

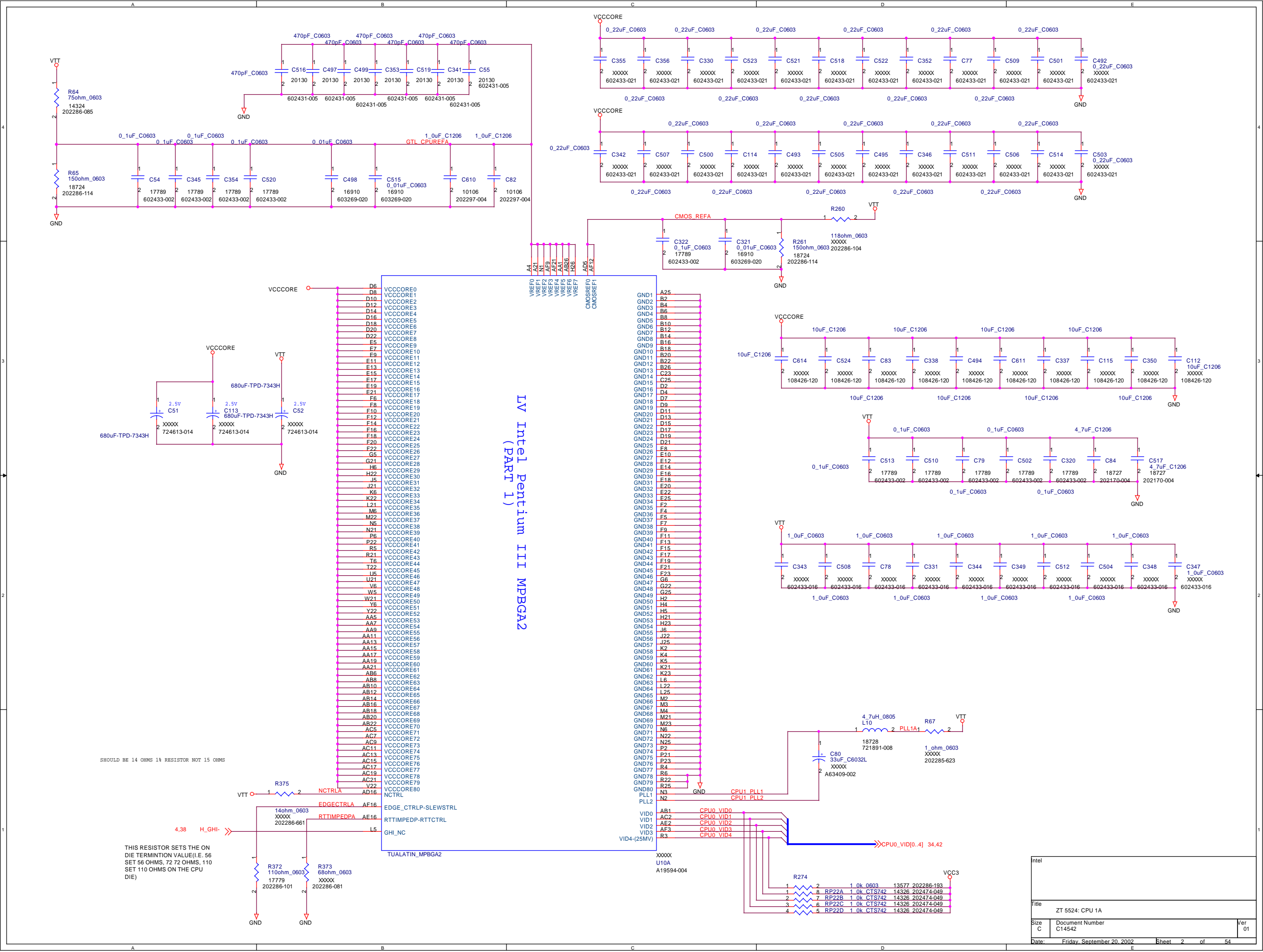
### High Performance Board

### Reference Design

VER	MAT#	REV	DESCRIPTION	DATE	
01	A66671-003	01	ZT 5524 - FAB - B - SCHEMATICS	4-10-2002	

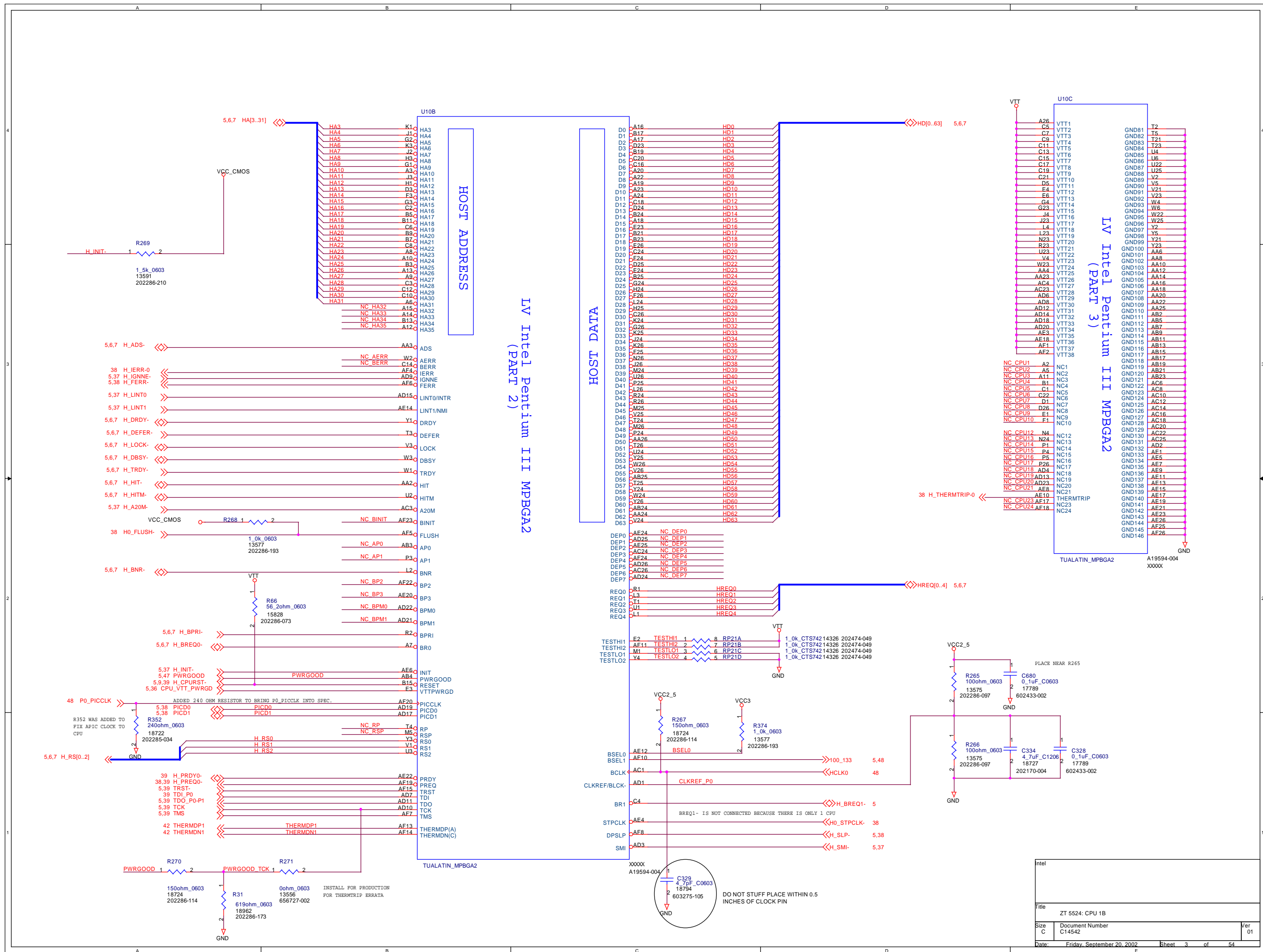


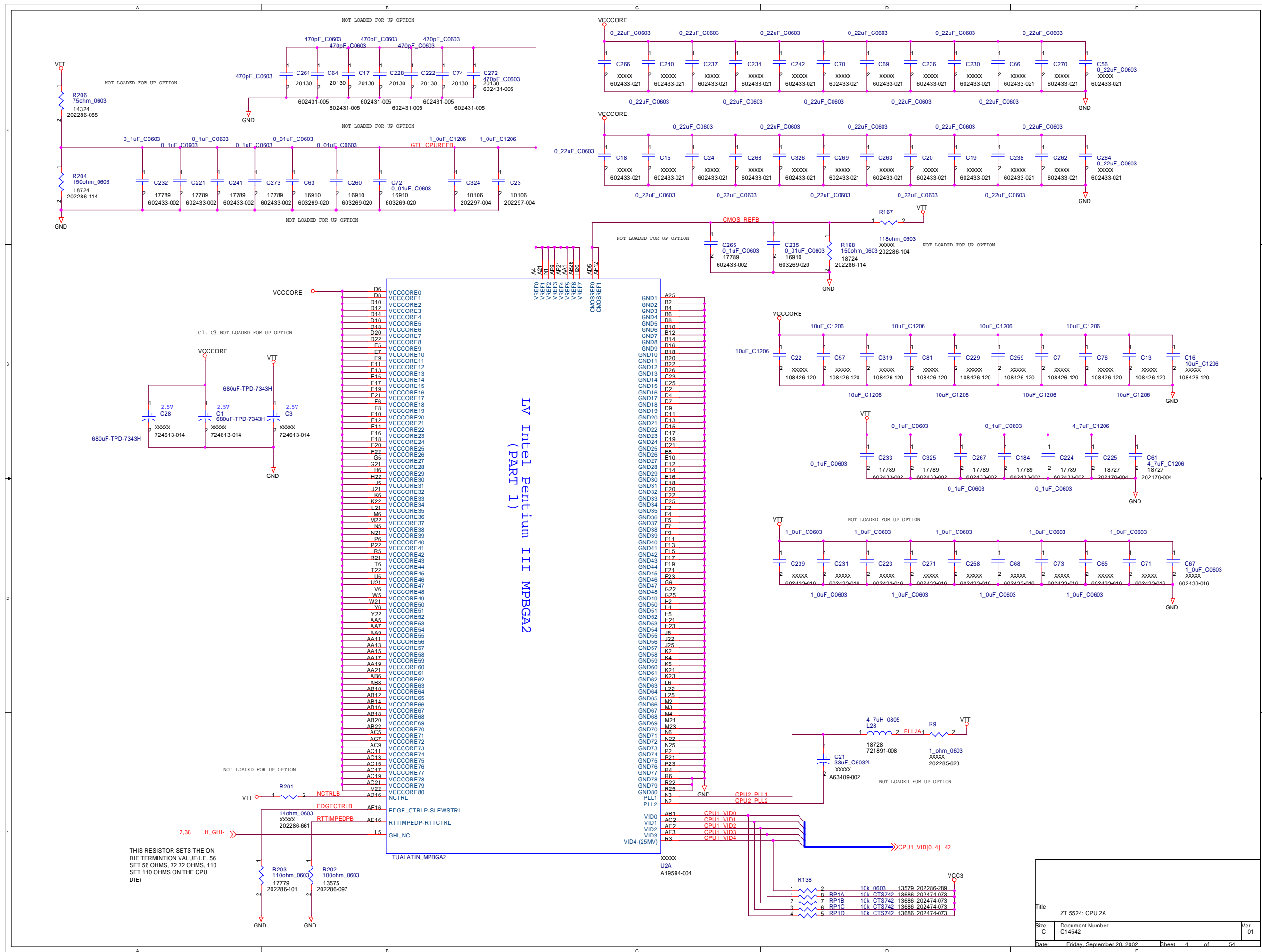
\*Other names and brands may be claimed as the property of others.



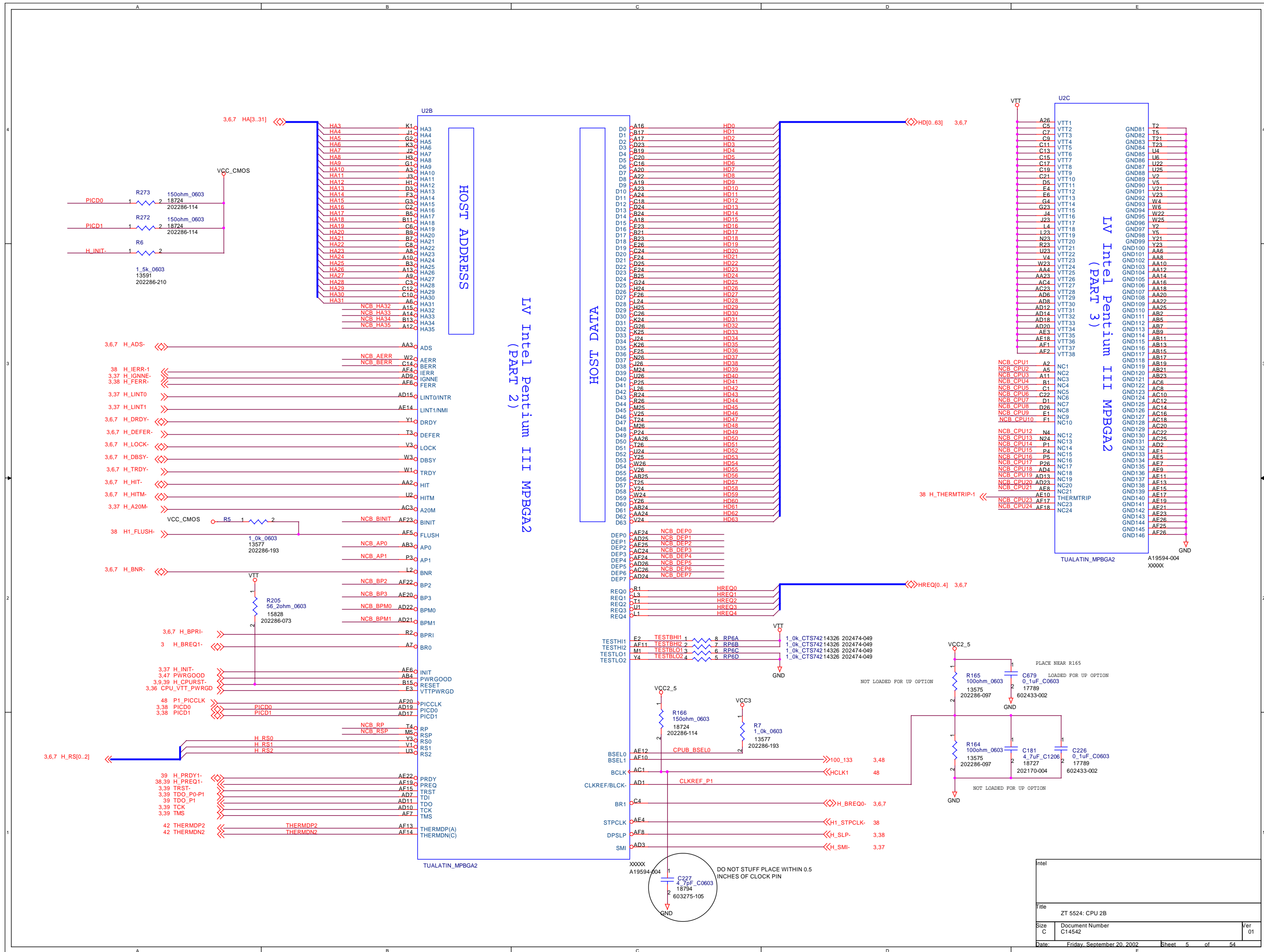
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Title			
ZT 5524: CPU 1A			
Size	Document Number		Ver
C	C14542		01
Date:	Friday, September 20, 2002	Sheet	2 of 54



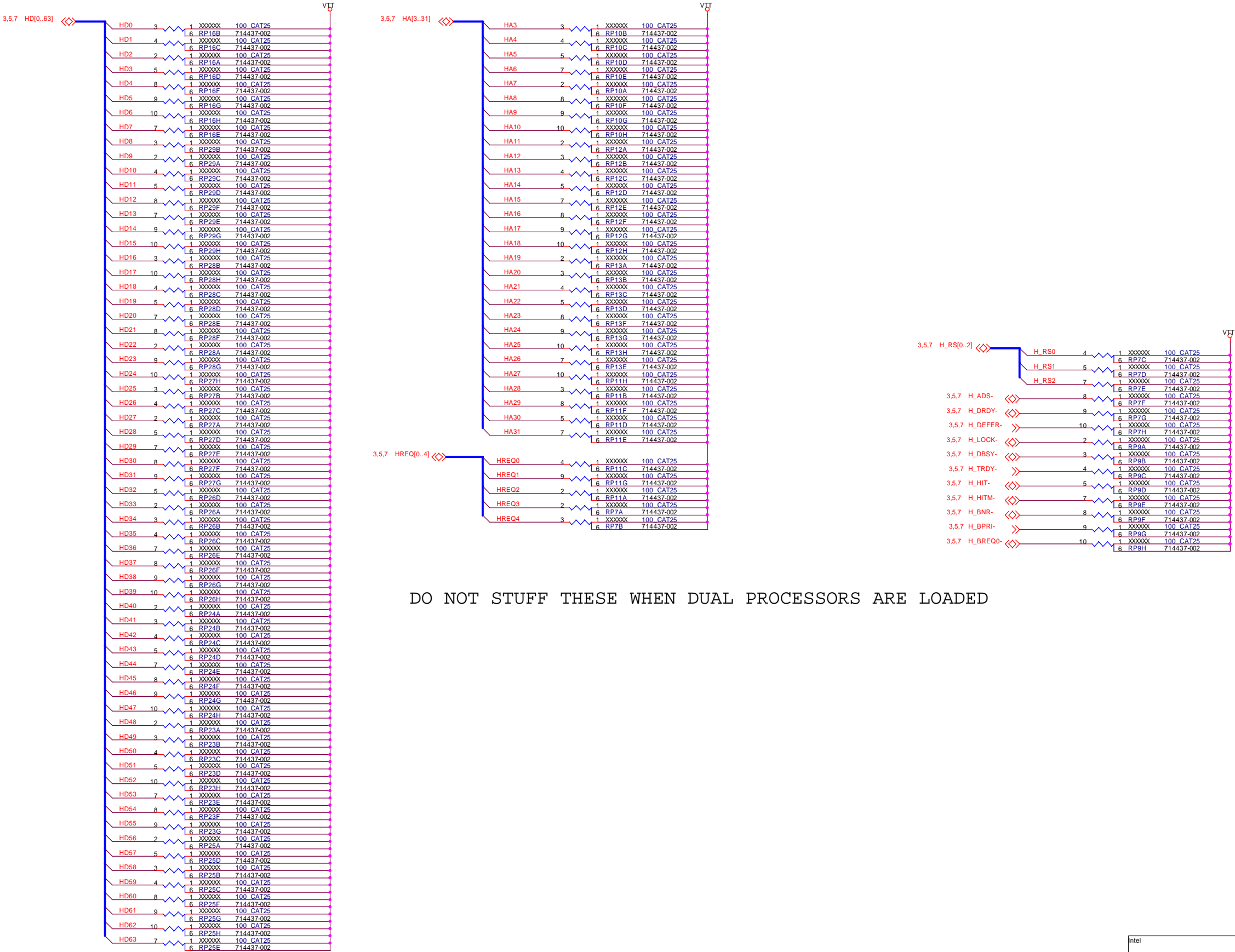




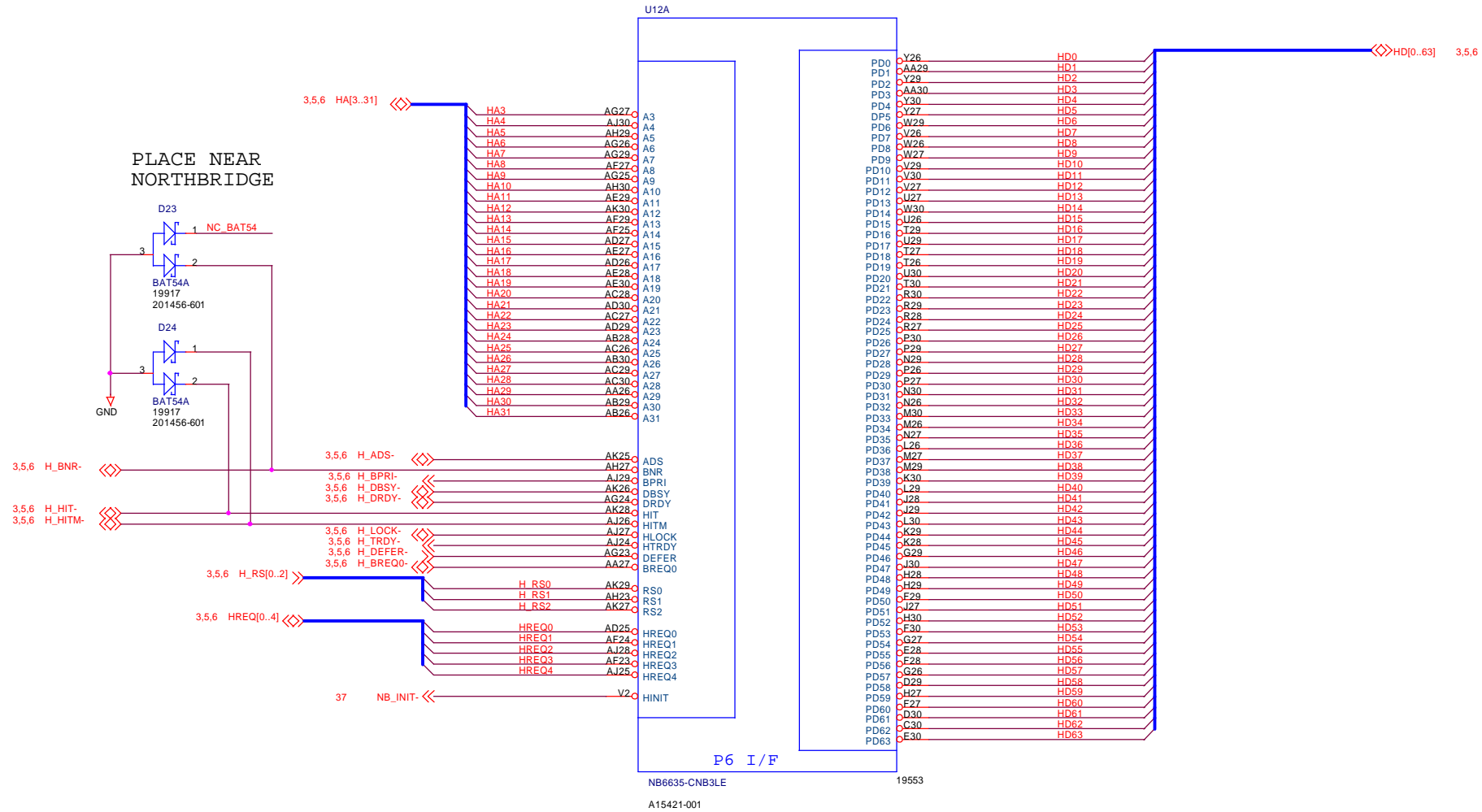
Title ZT 5524: CPU 2A		
Size C	Document Number C14542	Ver 01
Date: Friday, September 20, 2002	Sheet 4 of 54	



GTL TERMINATIONS

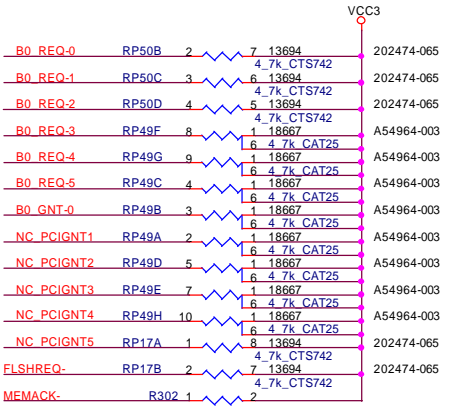
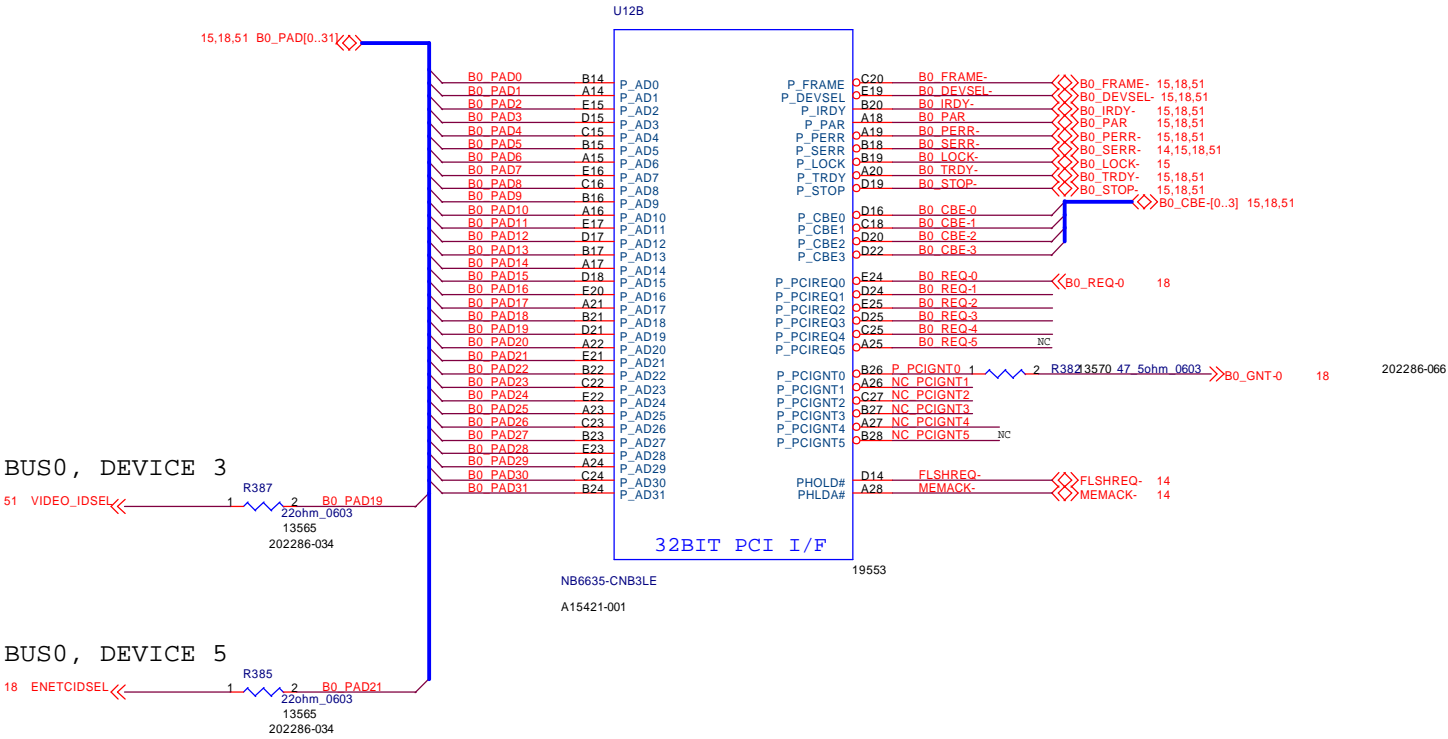


SERVERWORKS CHAMPION\* CNB 3.0 LE-T NORTH BRIDGE

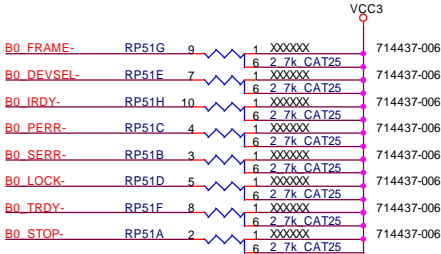


\*Other names and brands may be claimed as the property of others.

SERVERWORKS CHAMPION\* CNB 3.0 LE-T NORTH BRIDGE

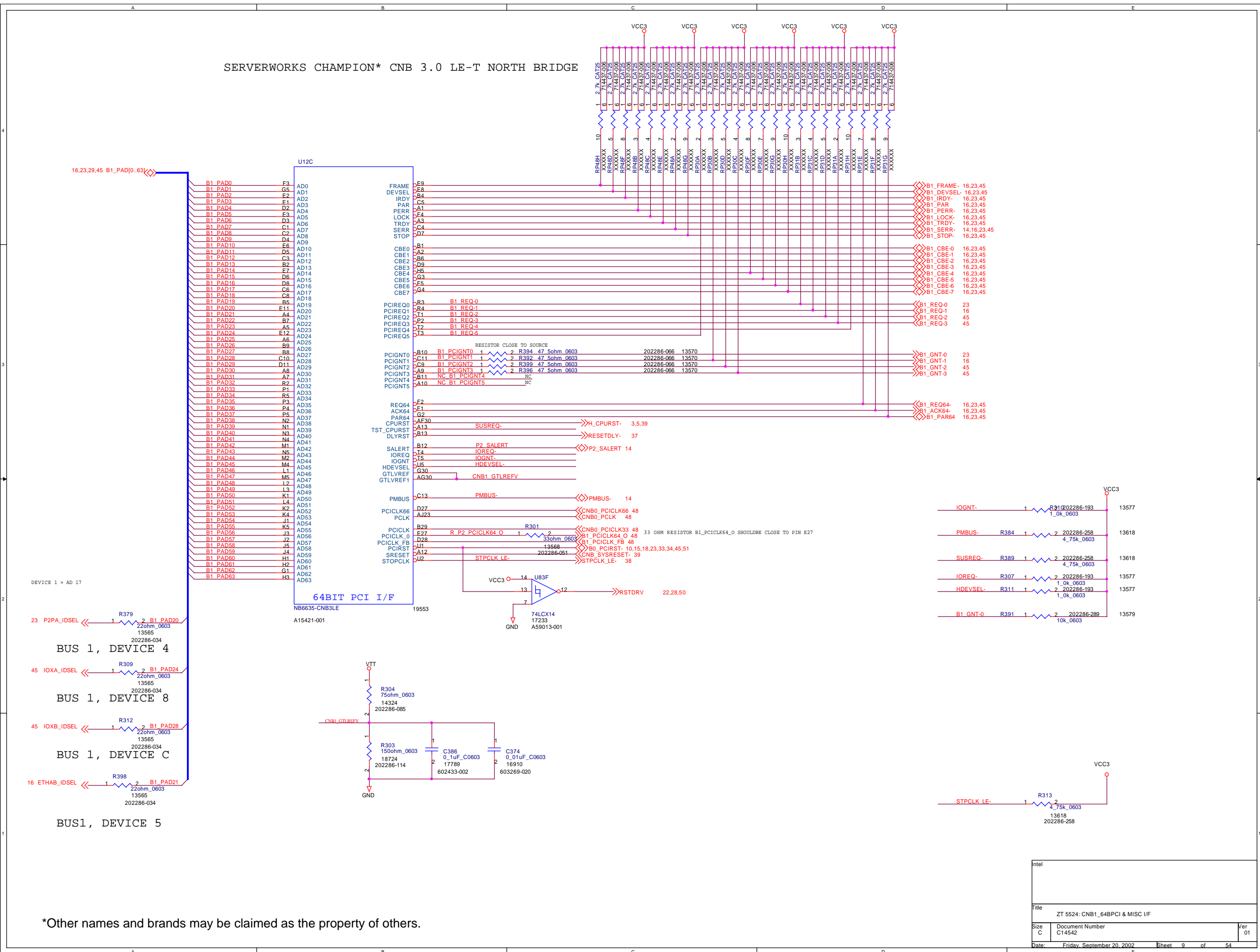


32 BIT-PCI PULLUPS



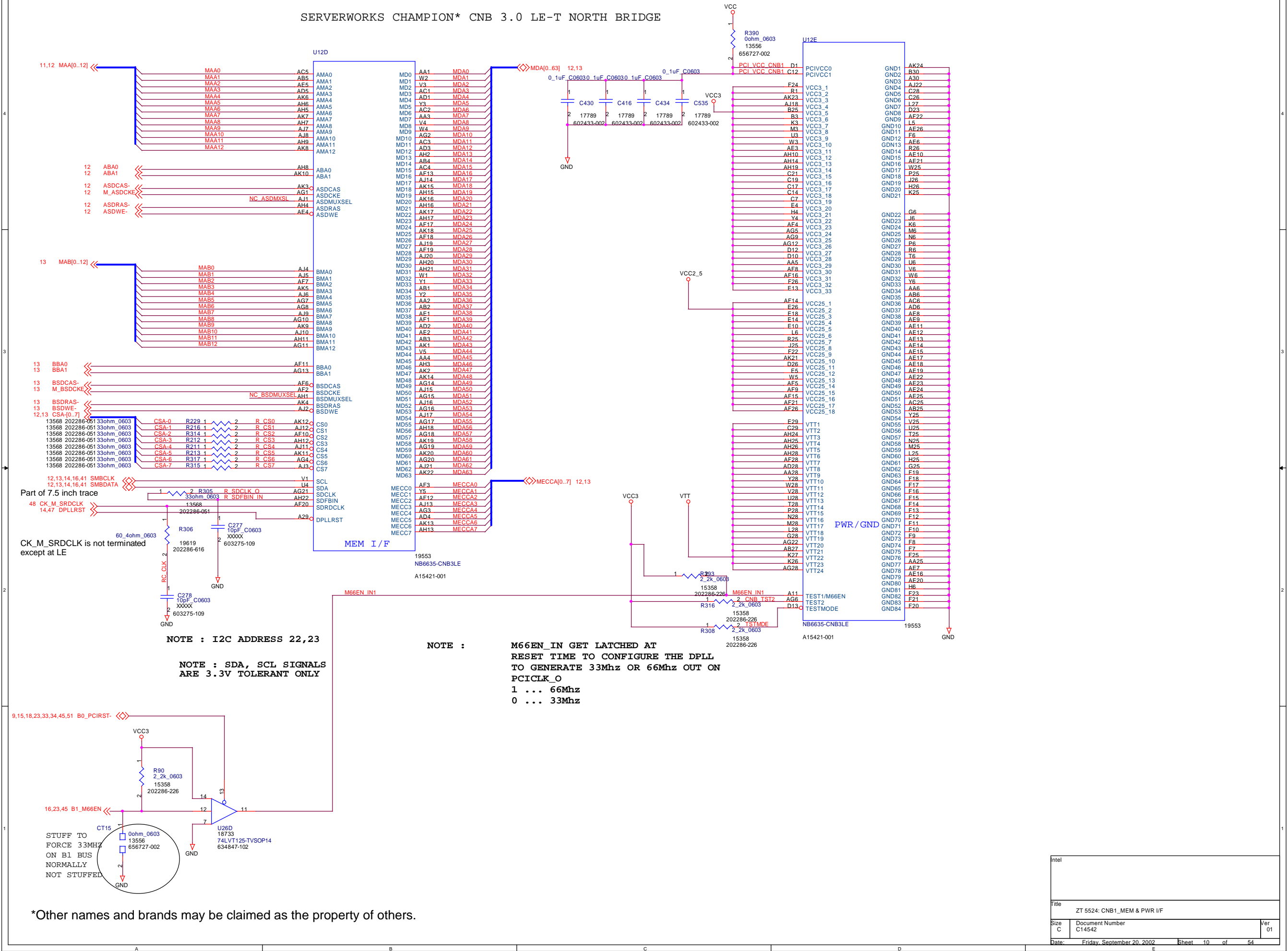
\*Other names and brands may be claimed as the property of others.







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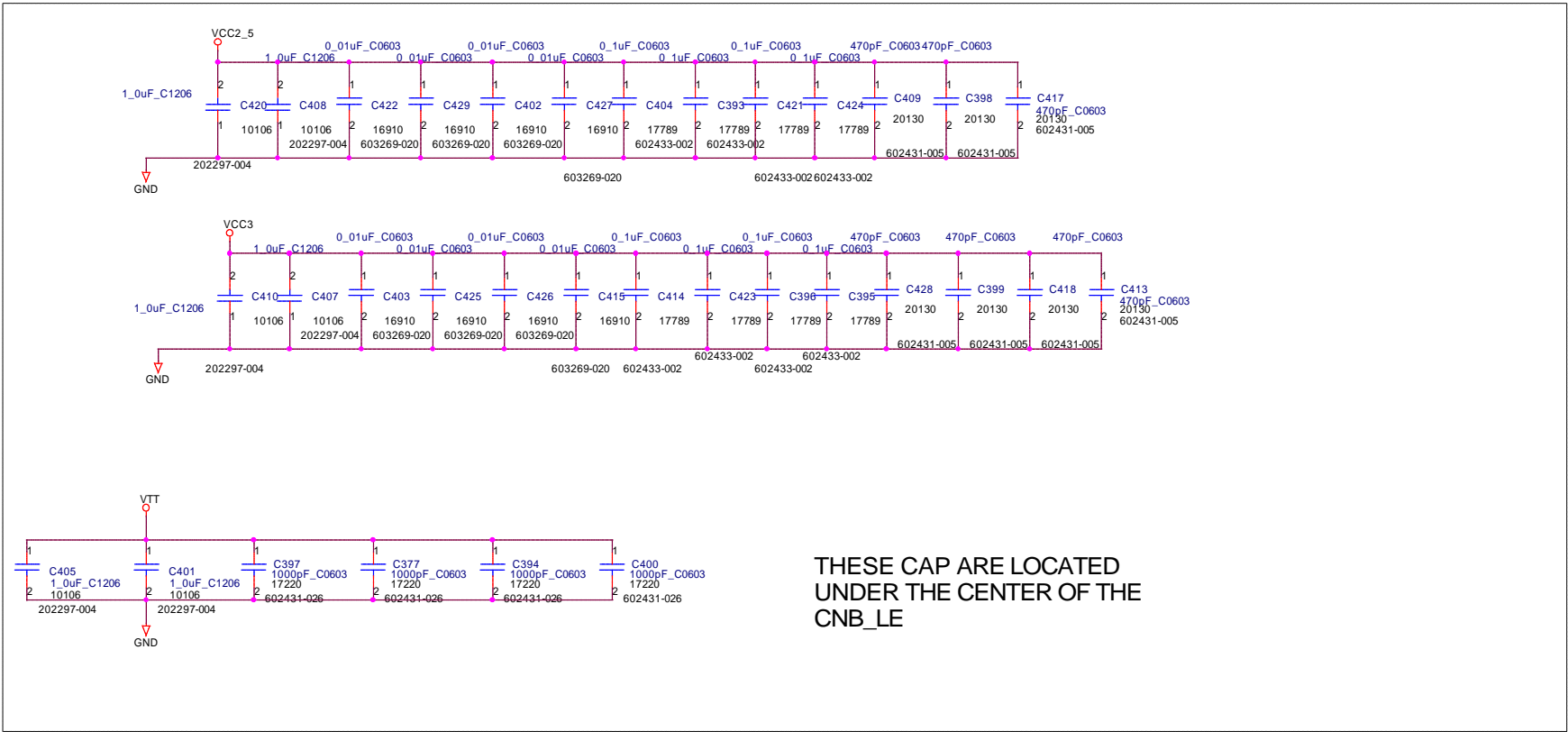
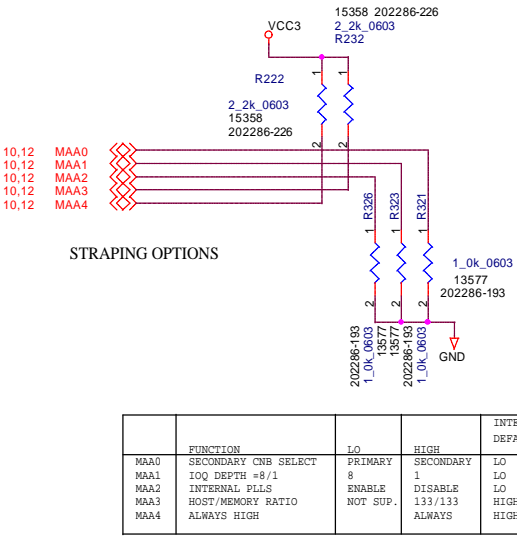
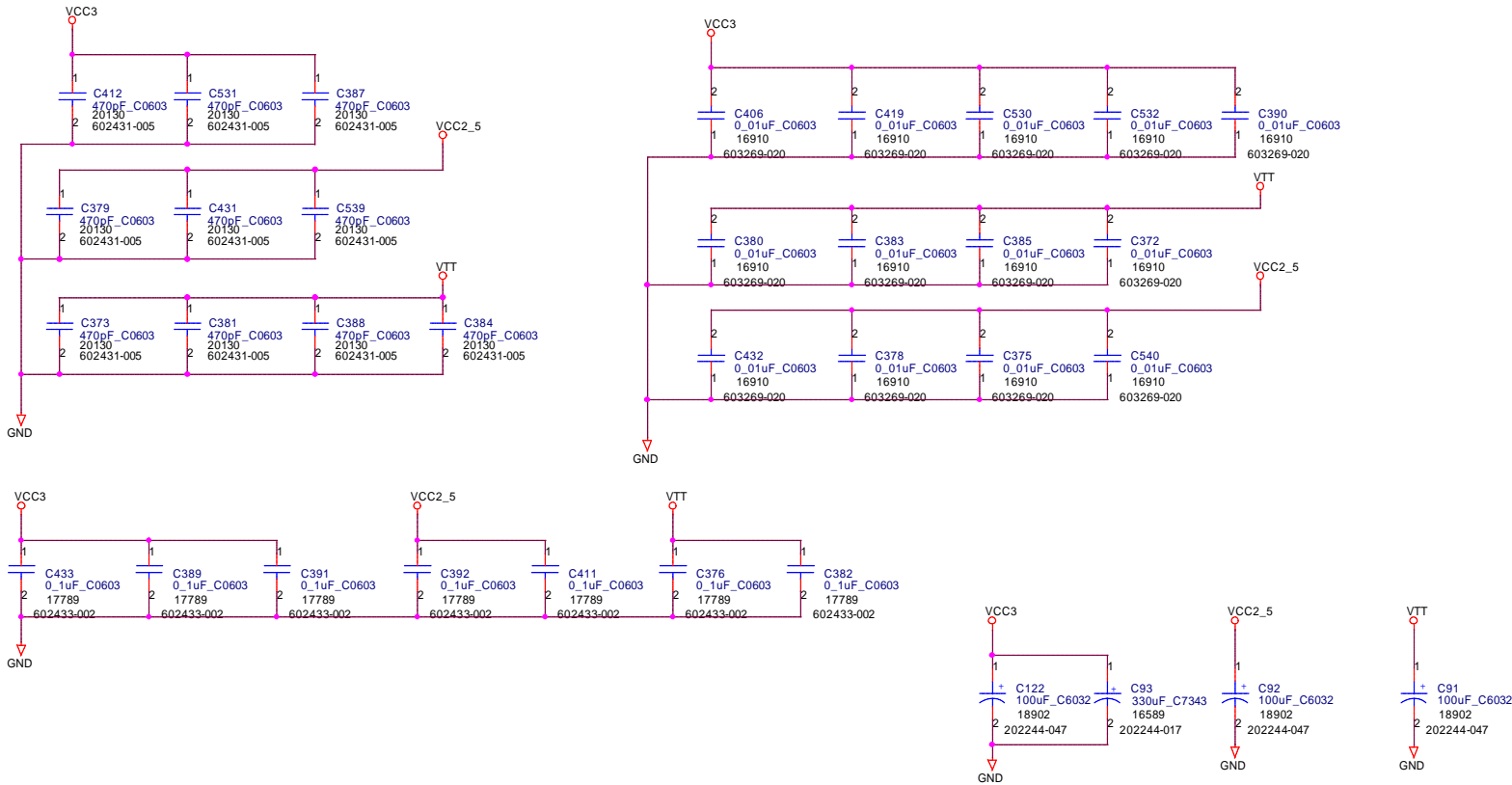


\*Other names and brands may be claimed as the property of others.

Intel		
Title		
ZT 5524: CNB1_MEM & PWR I/F		
Size	Document Number	Ver
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DECAPS FOR CNB-3.0

.001uF CAP FOR - CPU I/F AREA  
.01uF CAP FOR - PCI I/F AREA / OTHER SLOW AREA



THESE CAP ARE LOCATED  
UNDER THE CENTER OF THE  
CNB\_LE

# DIMM SOCKET 0

# DIMM SOCKET 1

Use of Registered DIMM  
Module Only, REGE  
must be pulled high on  
Dimm Module

SMB address = 1010000b

Use of Registered DIMM  
Module Only, REGE  
must be pulled high on  
Dimm Module  
SMB address = 1010001b

intel		
Title ZT 5524: SDRAM INTERFACE		
Size C	Document Number C14542	Ver 01
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## DIMM SOCKET 2

## DIMM SOCKET 3

Use of Registered DIMM  
Module Only, REGE  
must be pulled high on  
Dimm Module

SMB address = 1010010b

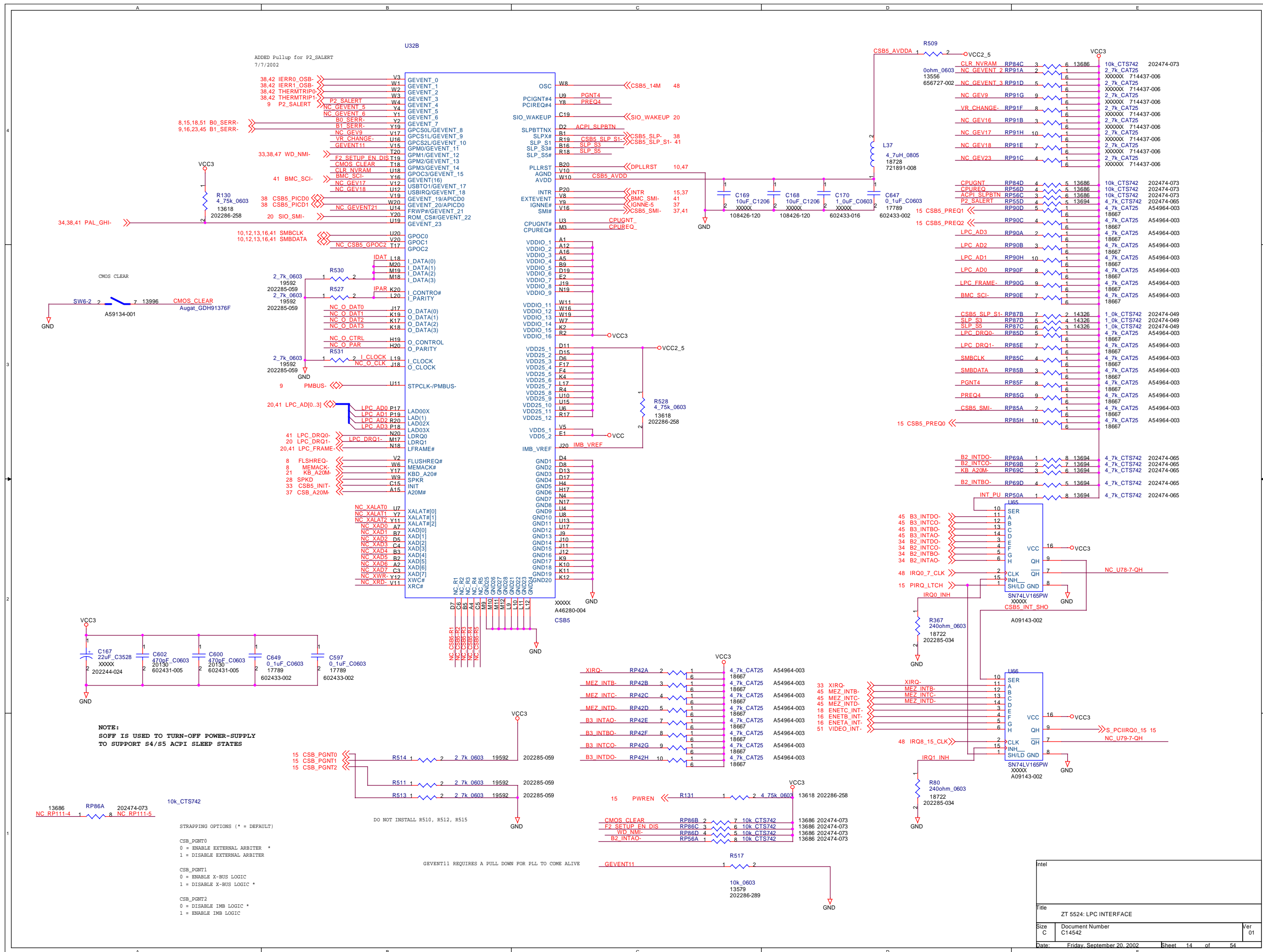
Intel

Title  
ZT 5524: SDRAM INTERFACE

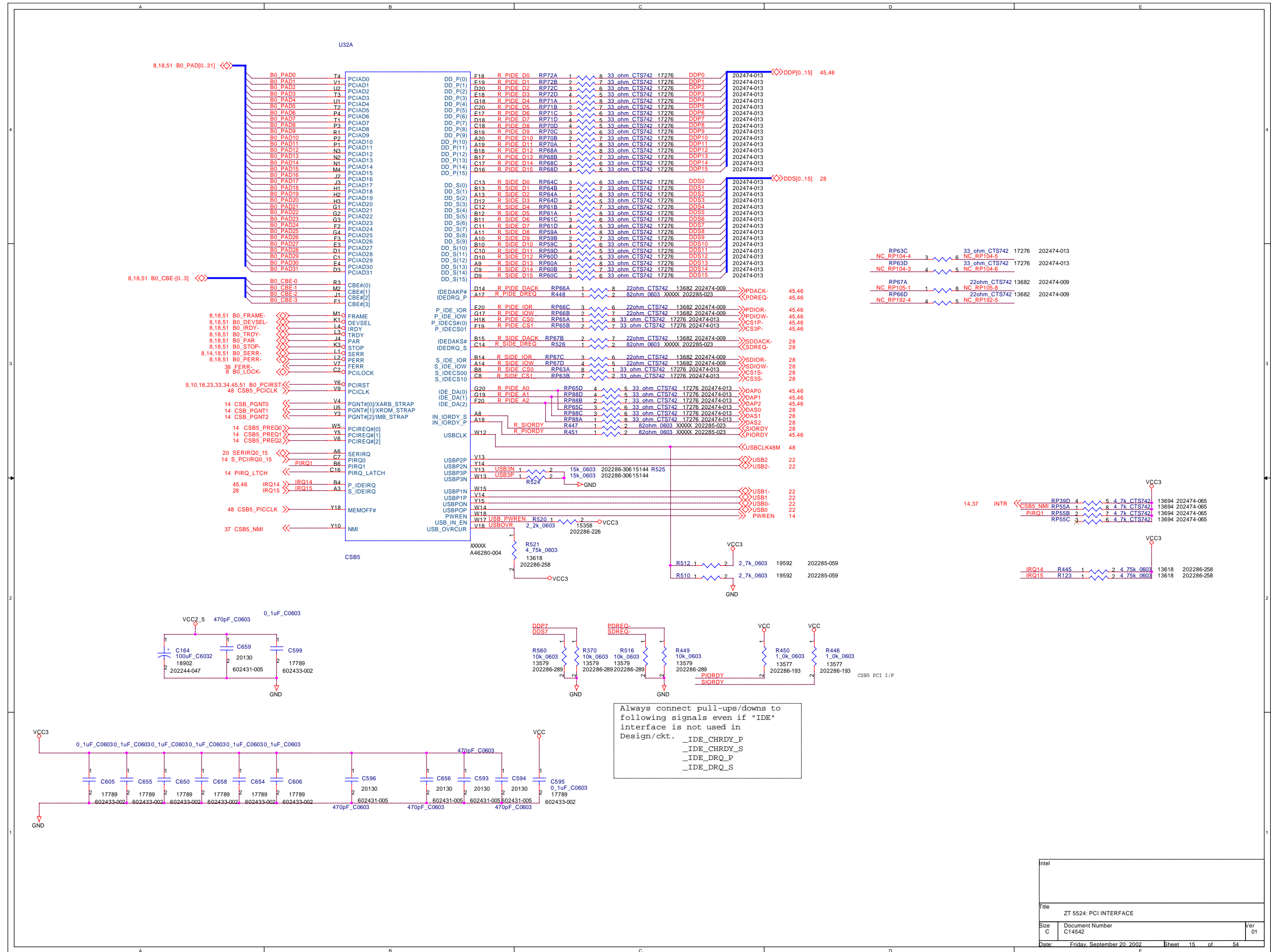
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C Document Number  
C14542

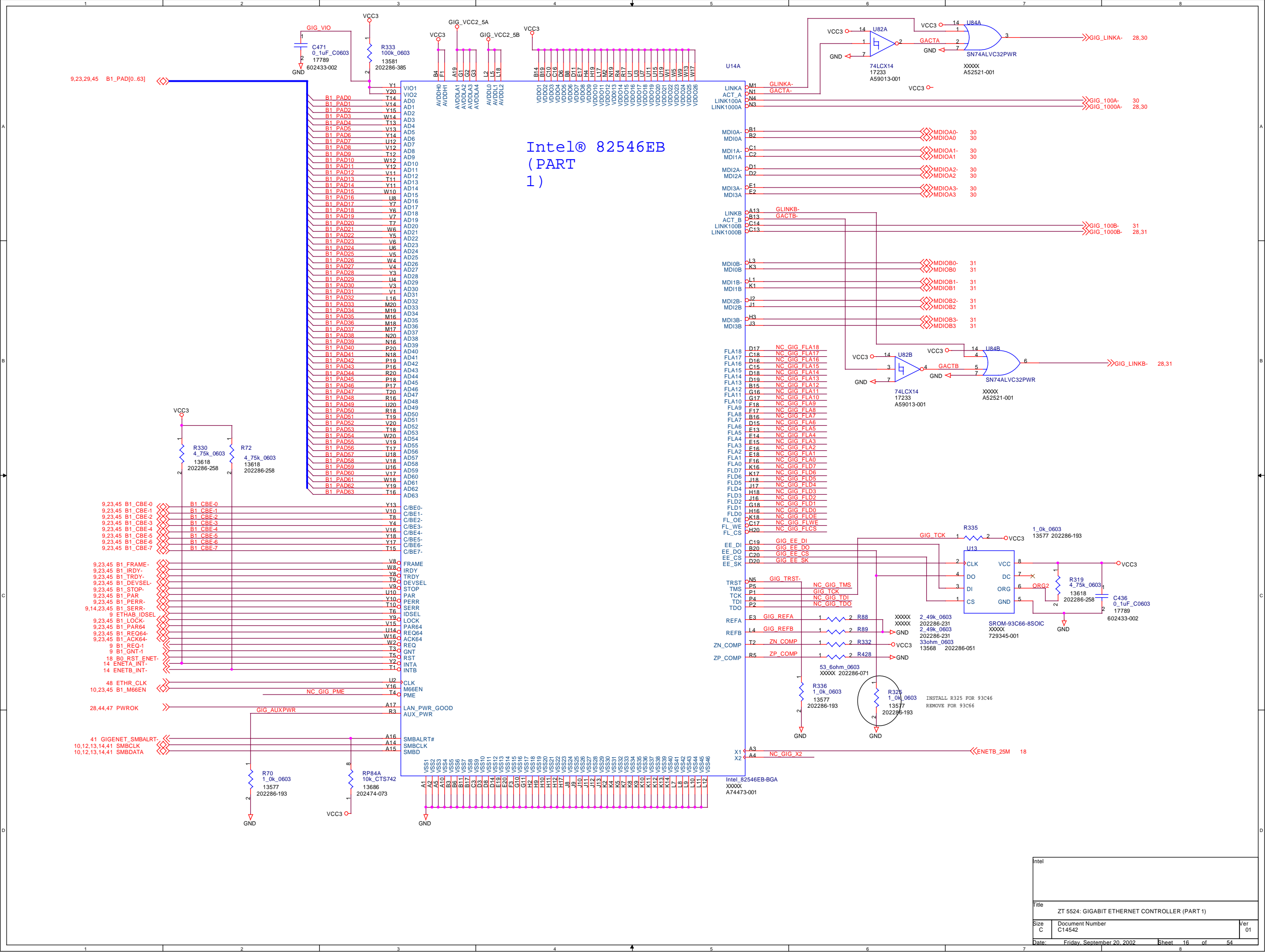
Ver  
01

Date: Friday, September 20, 2002 Sheet 13 of 54



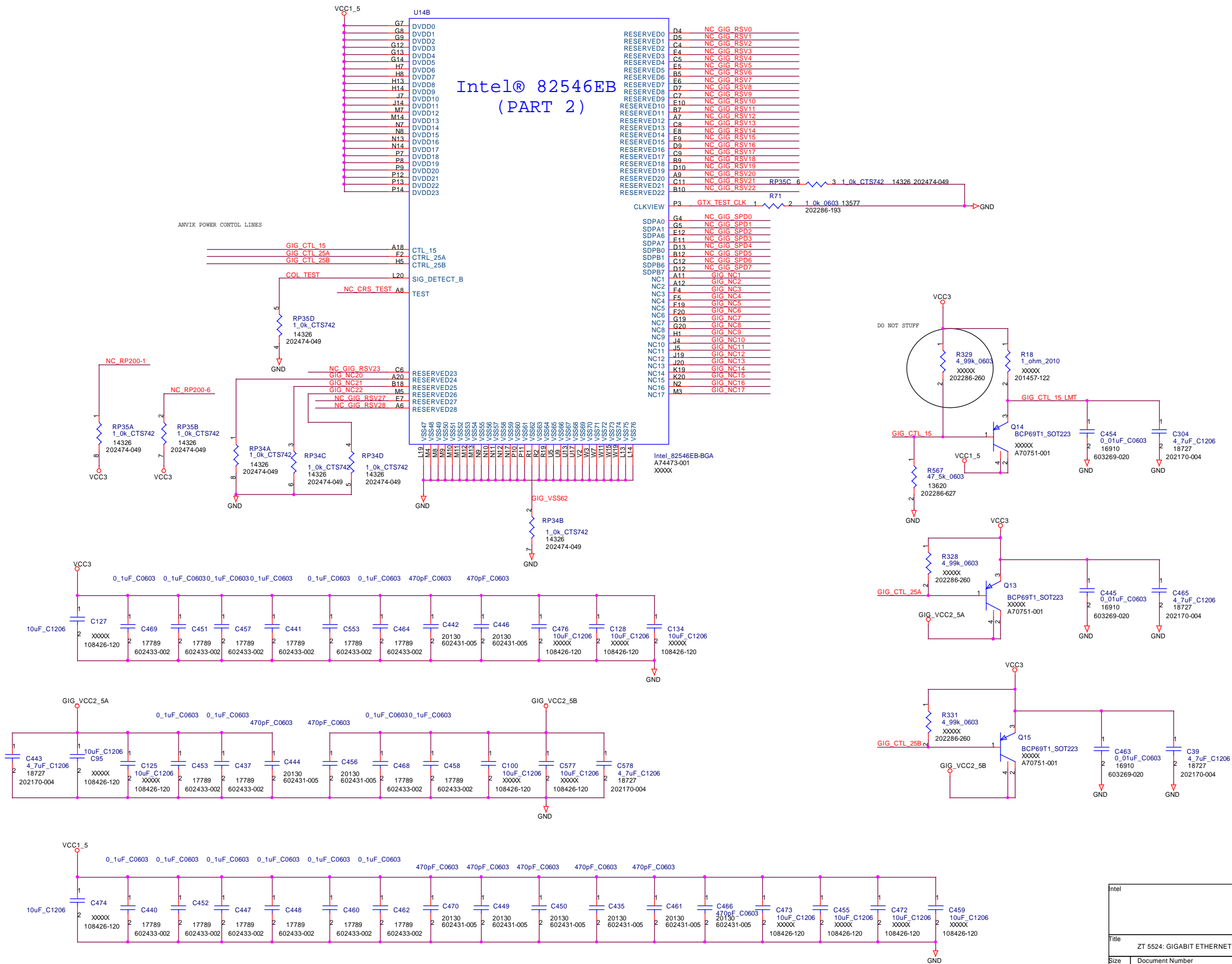






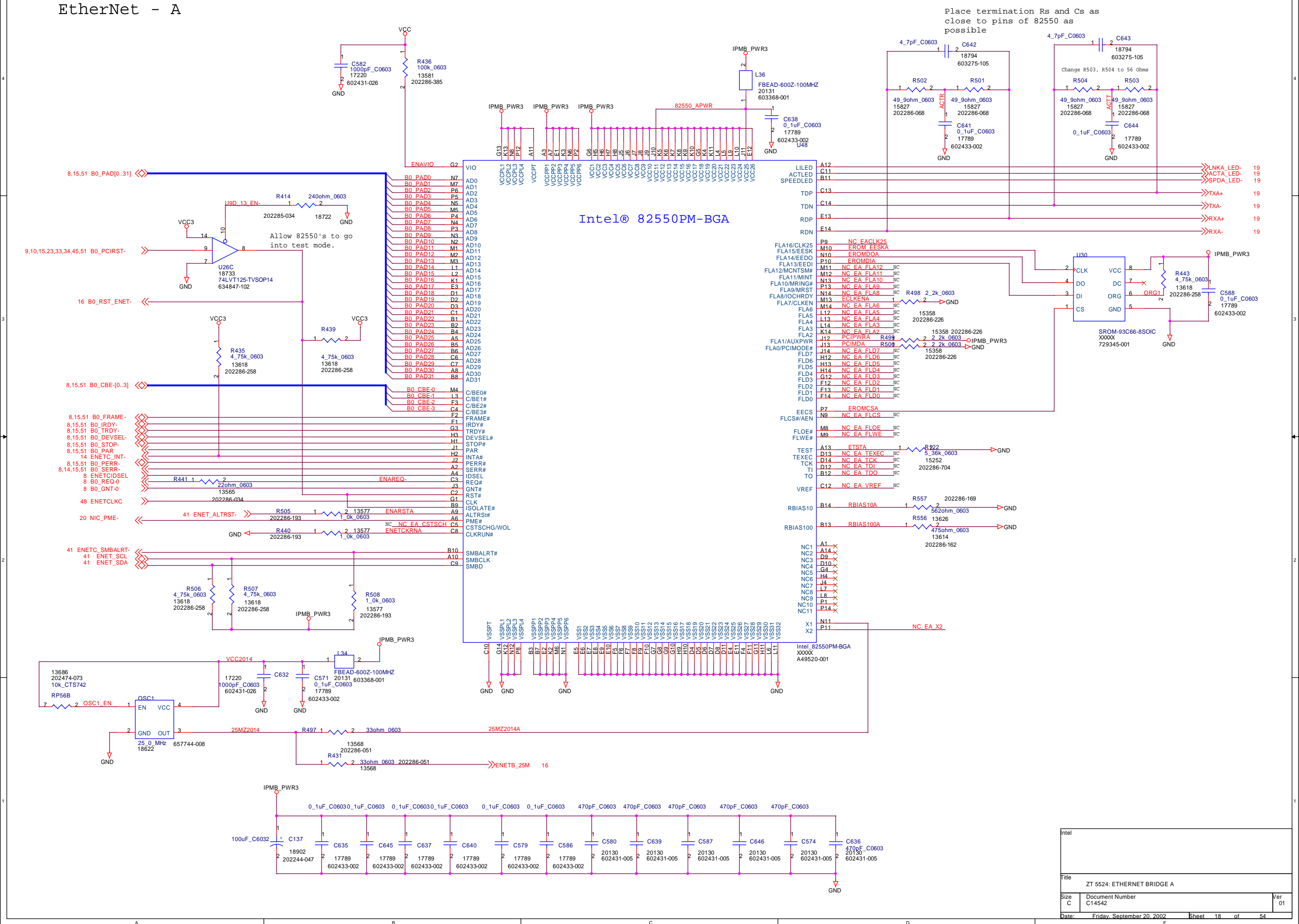


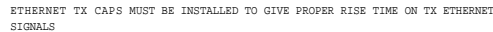
GIGABIT ETHERNET (PART 2)

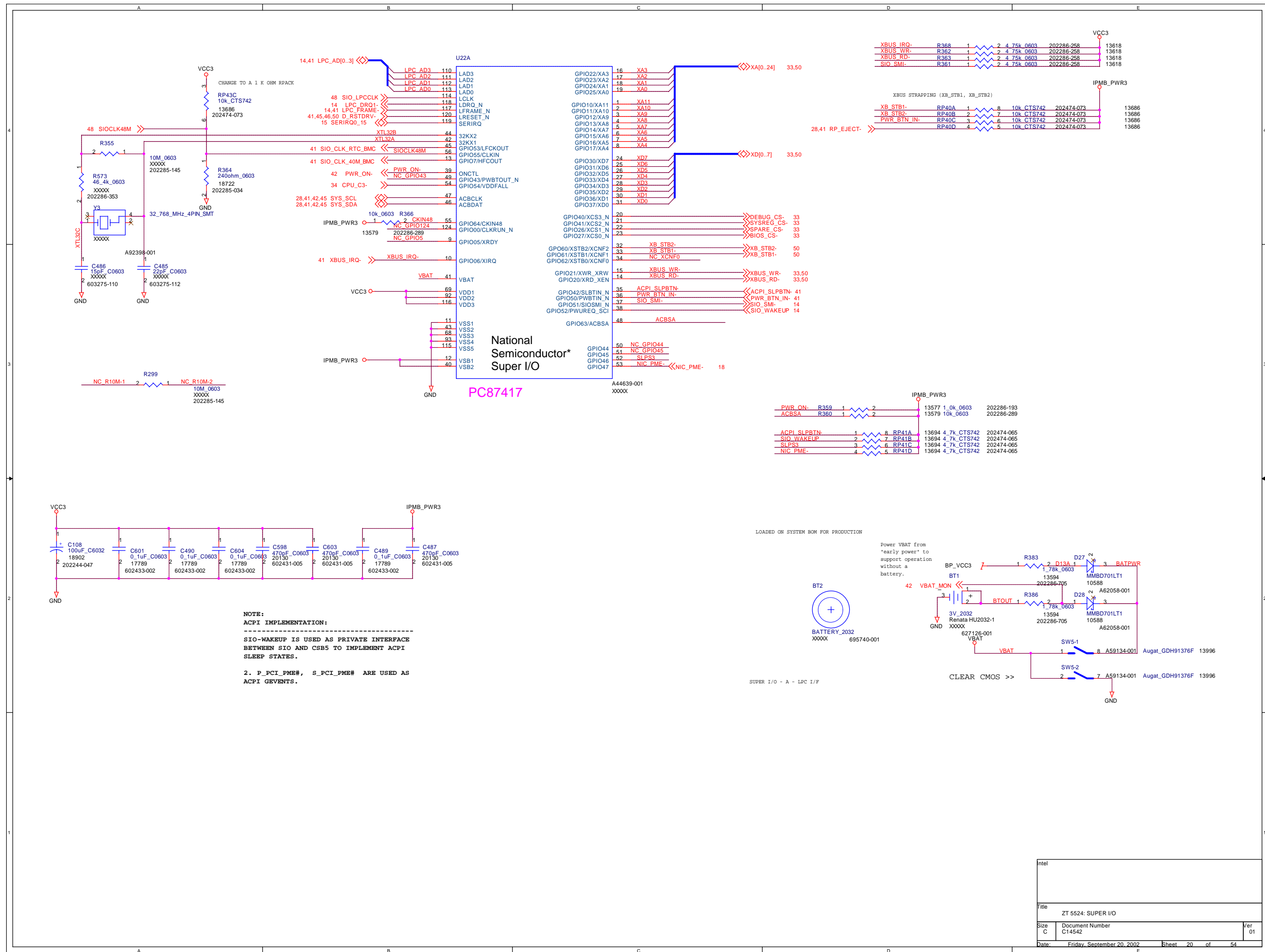


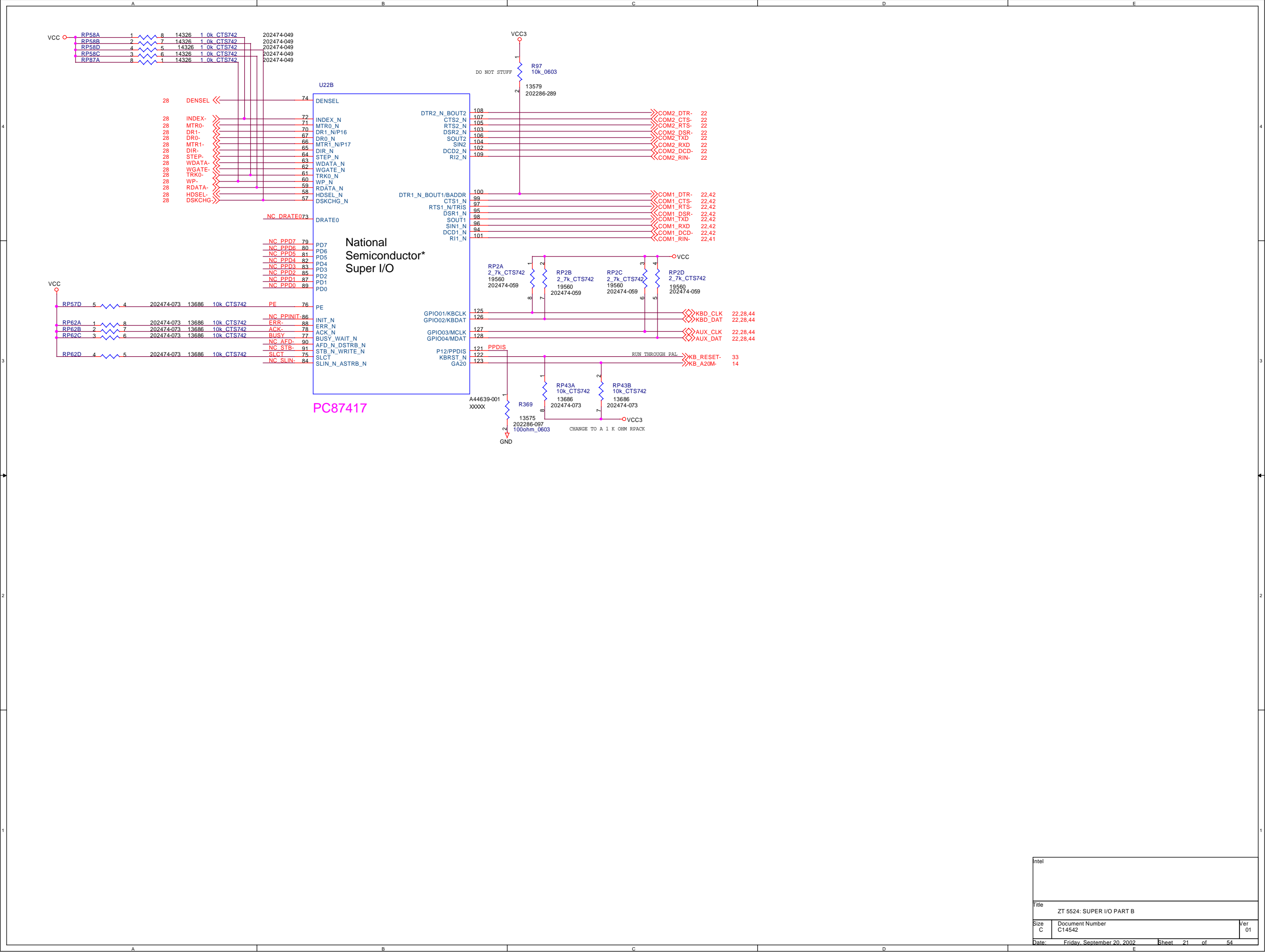
EtherNet - A

DEVICE 5



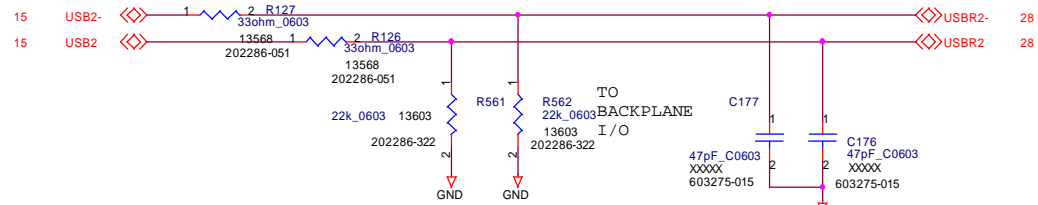




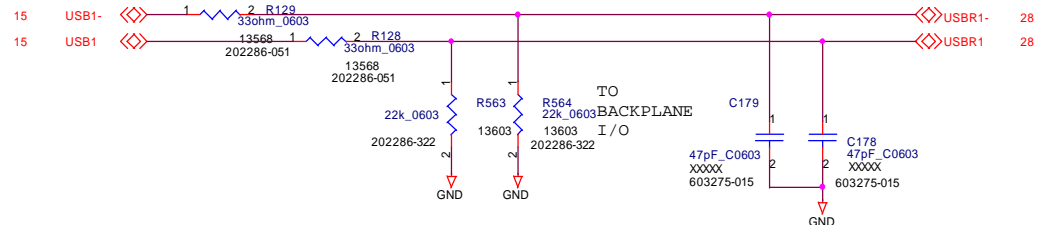


## COM1 SERIAL PORT

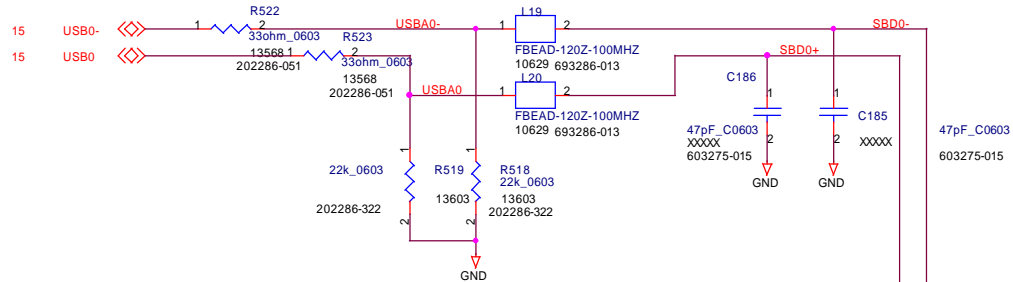
### USB CONNECTORS



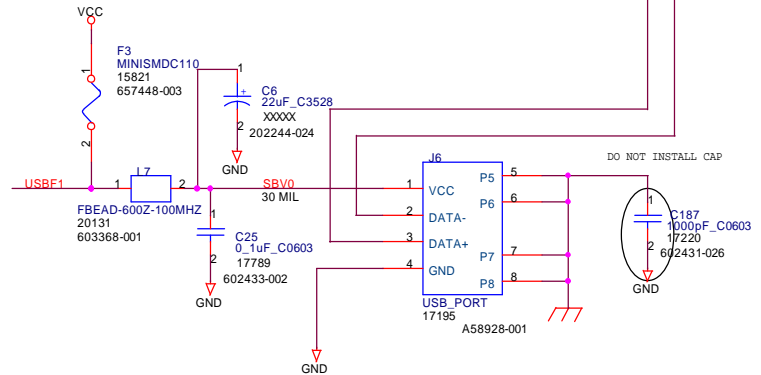
### USB CONNECTORS



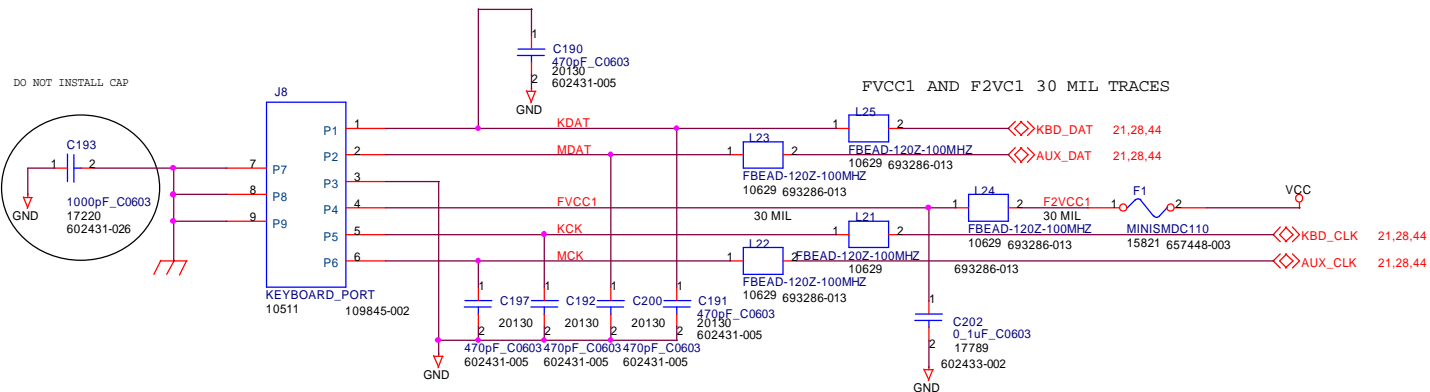
### USB1 AND SBV0 30 MIL TRACES



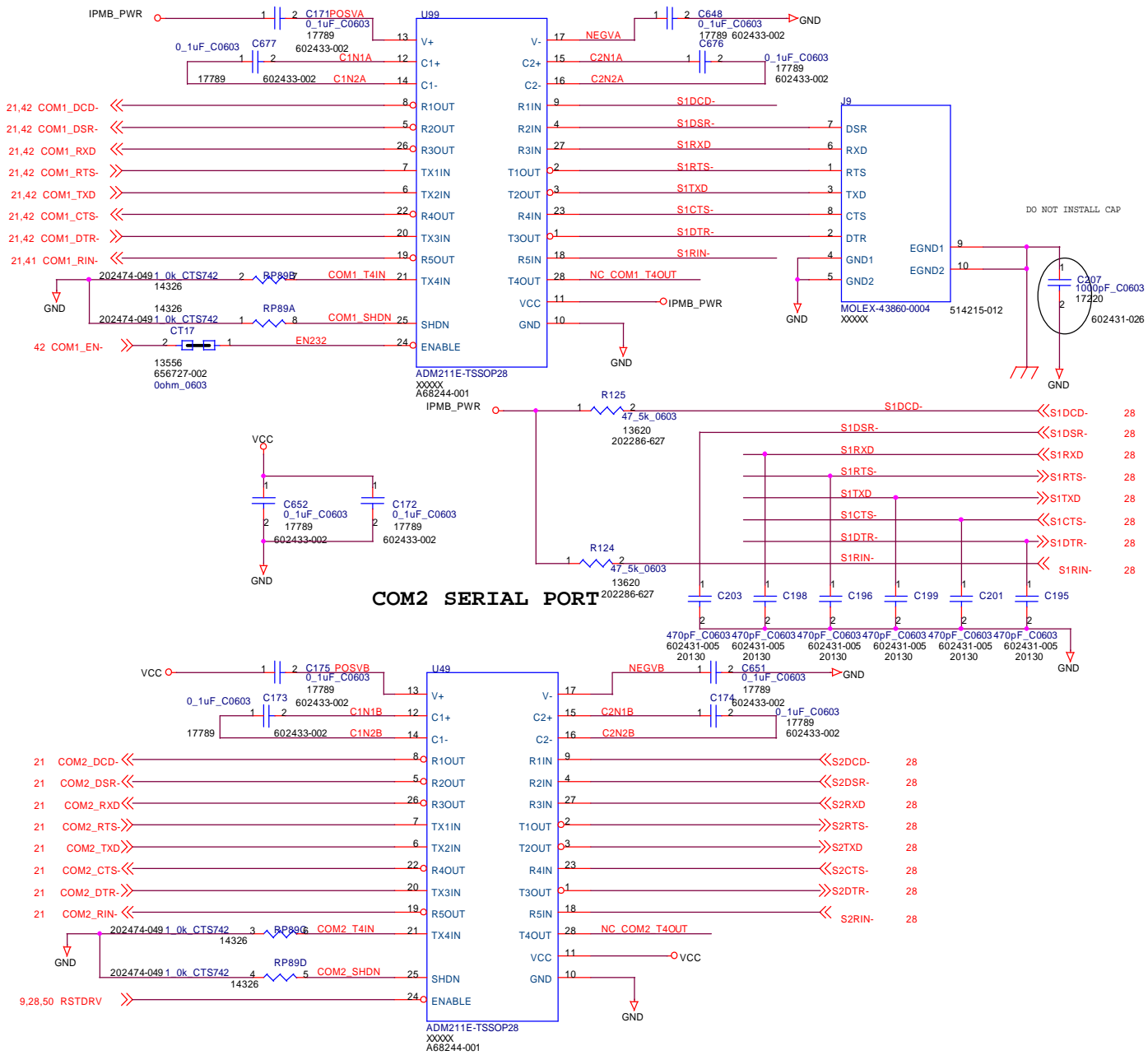
### USB1 AND SBV0 30 MIL TRACES



## KEYBOARD AND MOUSE



## COM2 SERIAL PORT



Intel		
Title		
ZT 5524: FRONT CONNECTORS		
Size	Document Number	Ver
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Date: Friday, September 20, 2002		
Sheet 22 of 54		



S1 PCI to  
PCI Bridge

9,10,15,18,33,34,45,51 B0\_PCIRST-

BUS 1 PCI BUS  
DEVICE 4

Intel® 21154

BACKPLANE  
BUS

SET AT 2.7K FOR 3.3 VOLT  
SIGNALING ENVIRONMENT,  
AND MEETS TYPICAL 5 VOLT  
SIGNALING ENVIRONMENT

9,16,45 B1\_CBE-0 B1\_CBE-0 AC11 P\_CBE0#  
9,16,45 B1\_CBE-1 B1\_CBE-1 AA7 P\_CBE1#  
9,16,45 B1\_CBE-2 B1\_CBE-2 AB4 P\_CBE2#  
9,16,45 B1\_CBE-3 B1\_CBE-3 Y2 P\_CBE3#  
9,16,45 B1\_CBE-4 B1\_CBE-4 AC15 P\_CBE4#  
9,16,45 B1\_CBE-5 B1\_CBE-5 Y16 P\_CBE5#  
9,16,45 B1\_CBE-6 B1\_CBE-6 AB15 P\_CBE6#  
9,16,45 B1\_CBE-7 B1\_CBE-7 AA15 P\_CBE7#

9,16,45 B1\_DEVSEL B1\_DEVSEL# AA6 P\_DEVSEL#  
9,16,45 B1\_FRAME- B1\_FRAME-# AA5 P\_FRAME#  
9 P2PA\_IDSEL P\_IDSEL# Y1 P\_IDSEL#  
9,16,45 B1\_IRDY- B1\_IRDY-# AC5 P\_IRDY#  
9,16,45 B1\_LOCK- B1\_LOCK-# AB6 P\_LOCK#  
9,16,45 B1\_PAR- B1\_PAR-# AB7 P\_PAR#  
9,16,45 B1\_PERR- B1\_PERR-# AC7 P\_PERR#

9,14,16,45 B1\_SERR- B1\_SERR-# YZ P\_SERR#  
9,16,45 B1\_STOP- B1\_STOP-# AB6 P\_STOP#  
9,16,45 B1\_TRDY- B1\_TRDY-# AB6 P\_TRDY#

9,16,45 B1\_PAR64 B1\_PAR64# TZ1 P\_PAR64#  
9,16,45 B1\_REQ64 B1\_REQ64# AC14 P\_REQ64#  
9,16,45 B1\_ACK64 B1\_ACK64# AB14 P\_ACK64#

9 B1\_GNT-0 B1\_GNT-0# R2 P\_GNT#  
9 B1\_REQ-0 B1\_REQ-0# U3 P\_REQ#

48 P2PCCLKA P2PCCLKA# T3 P\_CLK

202474-0491\_0k\_CTS742 RP81A 1 8 14326 P2PA TCK N20 TCK  
202474-0491\_0k\_CTS742 RP81C 3 6 14326 P2PA TDI P22 TDI  
nc P2P TDO P22 TDO  
202474-0491\_0k\_CTS742 RP81B 2 7 14326 P2PA TMS P21 TMS  
202474-0491\_0k\_CTS742 RP81D 4 5 14326 P2PA TRST- N23 TRST#

VCC3 RP82D 4 5 10k CTS742 202474-073 13686 P1GP0 L1 GPIO0  
RP82C 3 6 10k CTS742 202474-073 13686 P1GP1 L4 GPIO1  
RP82A 1 8 10k CTS742 202474-073 13686 P1GP2 K3 GPIO2  
RP82B 2 7 10k CTS742 202474-073 13686 P1GP3 K2 GPIO3

202285-034 R377 18722 1 2 P1 MSKIN R21 MSK\_IN

34 S1\_BRDG\_M66EN 10,16,45 B1\_M66EN VCC3 R378 1 2 10k 0603 M66CFG R22 CFG0  
A14 CFG1  
AB10 CFG2

13579 202286-289 0ohm\_0603 CT24 13556  
656727-002  
INSTALL CT TO FORCE  
33 Mhz OPERATION ON  
B1 AND B2 BUSES,  
ONLY INSTALL IF CT1  
AND CT16 ALSO  
INSTALLED

S\_CBE0# A15 B2\_CBE-0 25  
S\_CBE1# C12 B2\_CBE-1 25  
S\_CBE2# D9 B2\_CBE-2 25  
S\_CBE3# C6 B2\_CBE-3 25  
S\_CBE4# D19 B2\_CBE-4 25  
S\_CBE5# A20 B2\_CBE-5 25  
S\_CBE6# C19 B2\_CBE-6 25  
S\_CBE7# A19 B2\_CBE-7 25

S\_DEVSEL# B10 B2\_DEVSEL- 25  
S\_FRAME# C9 B2\_FRAME- 25,34  
S\_IRDY# A11 B2\_IRDY- 25,34  
S\_LOCK# B12 B2\_LOCK- 25  
S\_PERR# C11 B2\_PERR- 25  
S\_SERR# B11 B2\_SERR- 25  
S\_STOP# C10 B2\_STOP- 25  
S\_TRDY# A10 B2\_TRDY- 25

S\_PAR64 B19 B2\_PAR64 25  
S\_REQ64# C18 B2\_REQ64- 25  
S\_ACK64#

S\_REQ0# D4 B2\_SREQ-0 34  
S\_REQ1# C2 B2\_SREQ-1  
S\_REQ2# D3 B2\_SREQ-2  
S\_REQ3# E4 B2\_SREQ-3  
S\_REQ4# D1 B2\_SREQ-4  
S\_REQ5# C2 B2\_SREQ-5  
S\_REQ6# E3 B2\_SREQ-6  
S\_REQ7# D1 B2\_SREQ-7  
S\_REQ8# E1 B2\_SREQ-8

S\_GNT0# E2 P2P1GNT0 R474 1 B2\_REQ-7 34  
S\_GNT1# E3 NC P2P1GNT1  
S\_GNT2# E1 NC P2P1GNT2  
S\_GNT3# E2 NC P2P1GNT3  
S\_GNT4# G1 NC P2P1GNT4  
S\_GNT5# G4 NC P2P1GNT5  
S\_GNT6# G2 NC P2P1GNT6  
S\_GNT7# G3 NC P2P1GNT7  
S\_GNT8# H1 NC P2P1GNT8

S\_CLK0 L2 S\_CLK0 R380 1 S1\_REFCLK 49 202286-034  
S\_CLK1 L3 S\_CLK1 R470 1 S1\_ARBCLK 34 202286-034  
S\_CLK2 M3 NC S1\_CLK2  
S\_CLK3 M1 NC S1\_CLK3  
S\_CLK4 M2 NC S1\_CLK4  
S\_CLK5 N3 NC S1\_CLK5  
S\_CLK6 N1 NC S1\_CLK6  
S\_CLK7 P3 NC S1\_CLK7  
S\_CLK8 P2 NC S1\_CLK8  
S\_CLK9 P1 NC S1\_CLK9

S\_CLK# J4 S1\_CLK 49  
S\_CFN# K1 P2P1CFN 1 2 10k\_0603 VCC3

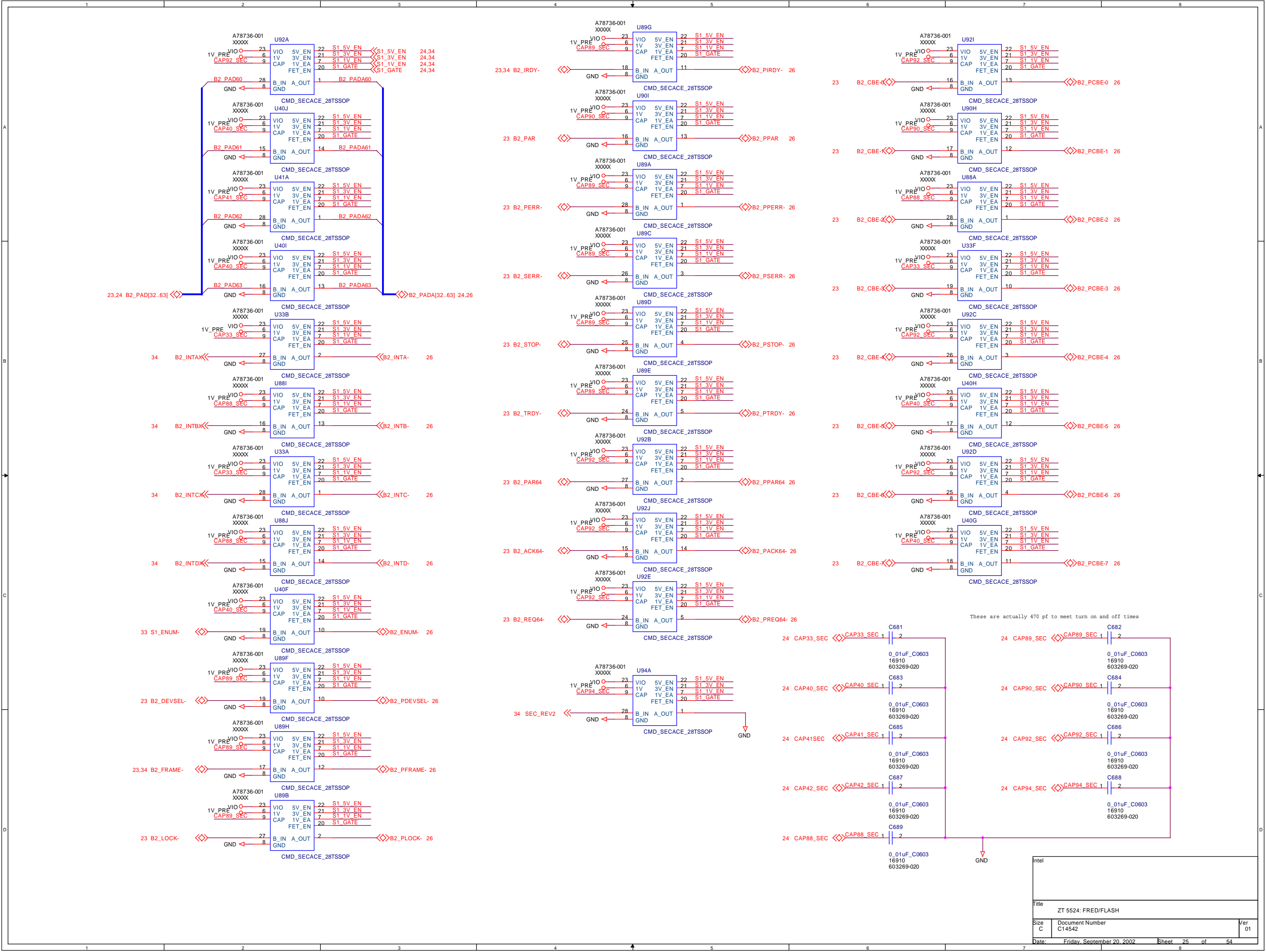
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A64236-001

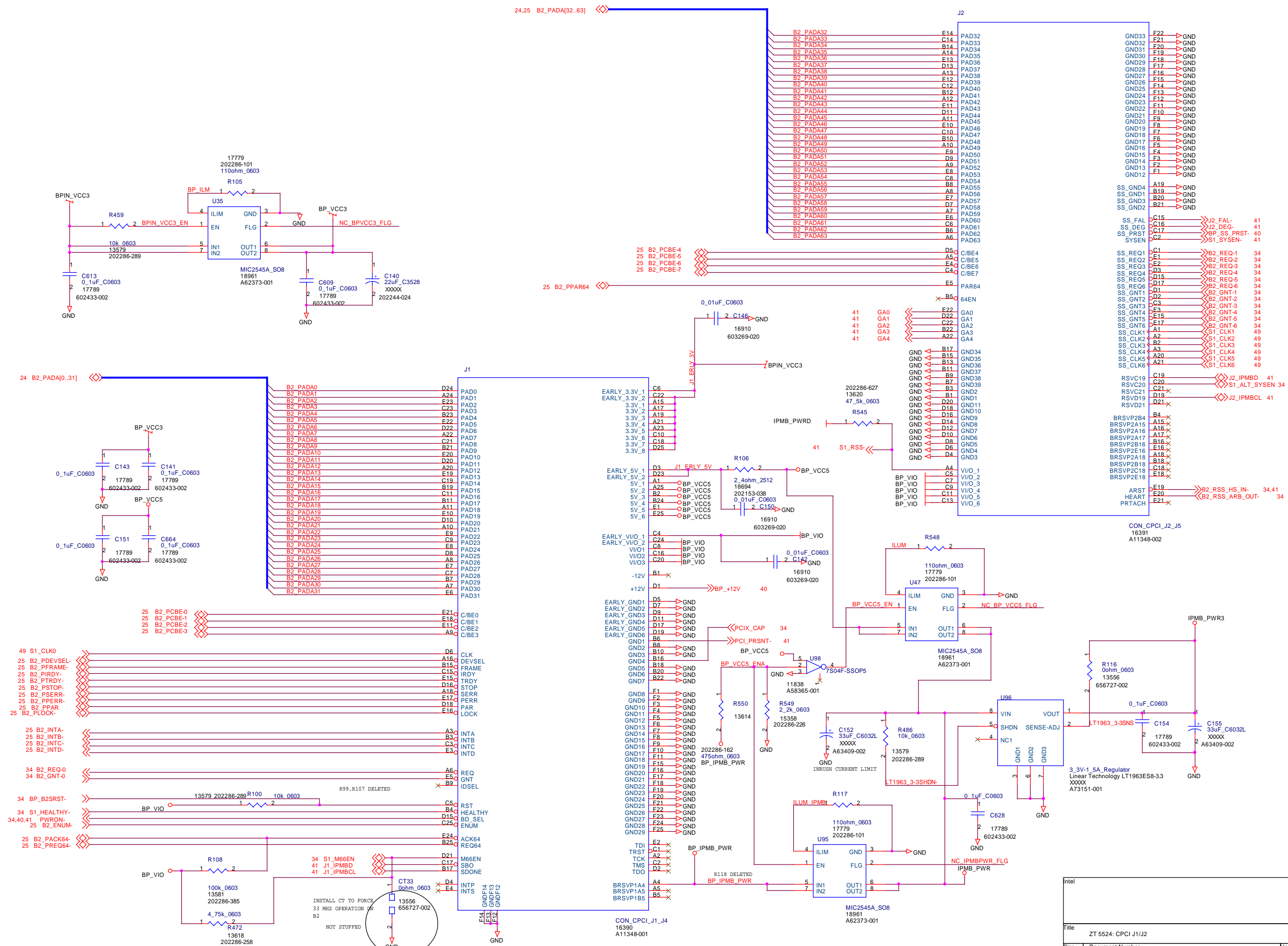
CT24 DELETED NOT NEEDED

Intel		
Title ZT 5524: P2P BRIDGE J1/J2		
Size C	Document Number C14542	Ver 01
Date: Friday, September 20, 2002 Sheet 23 of 54		

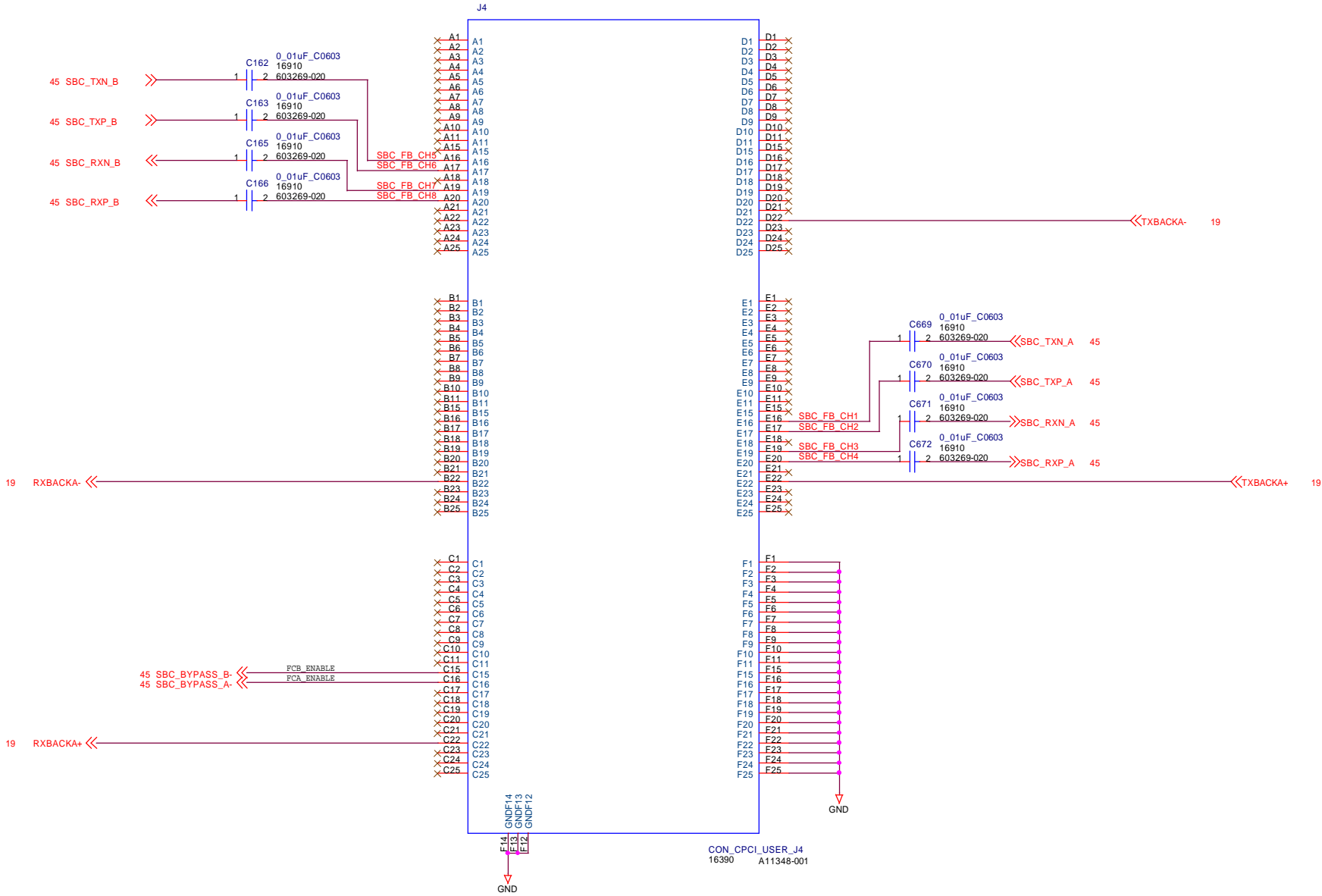




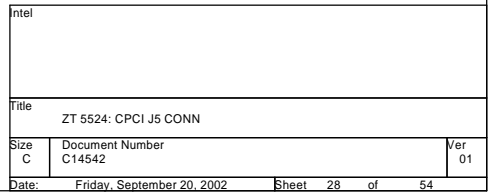
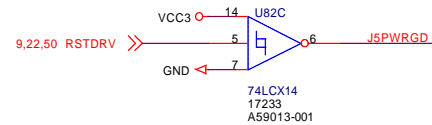


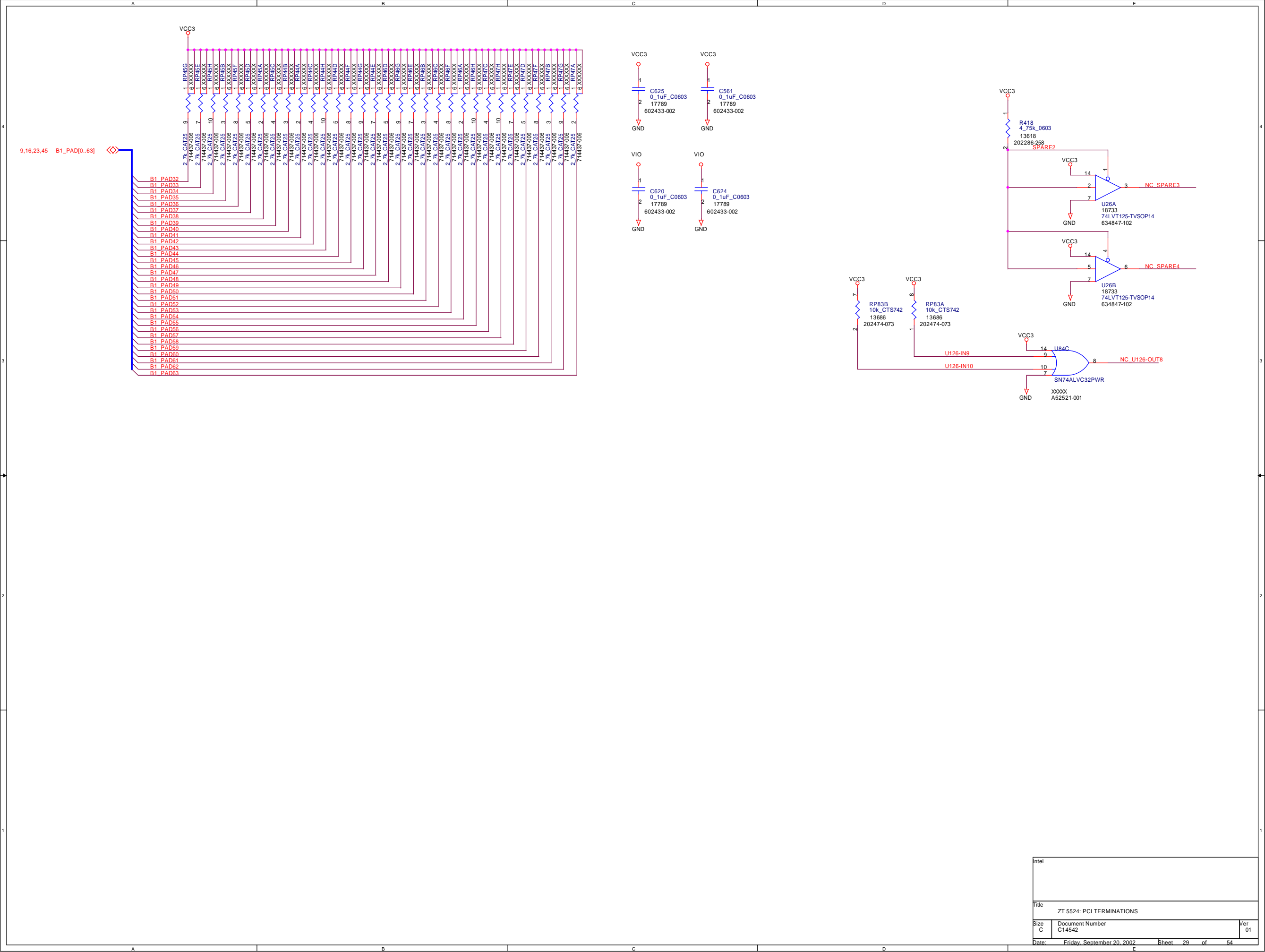


Place termination Rs and Cs as  
close to pins of 82559 as  
possible

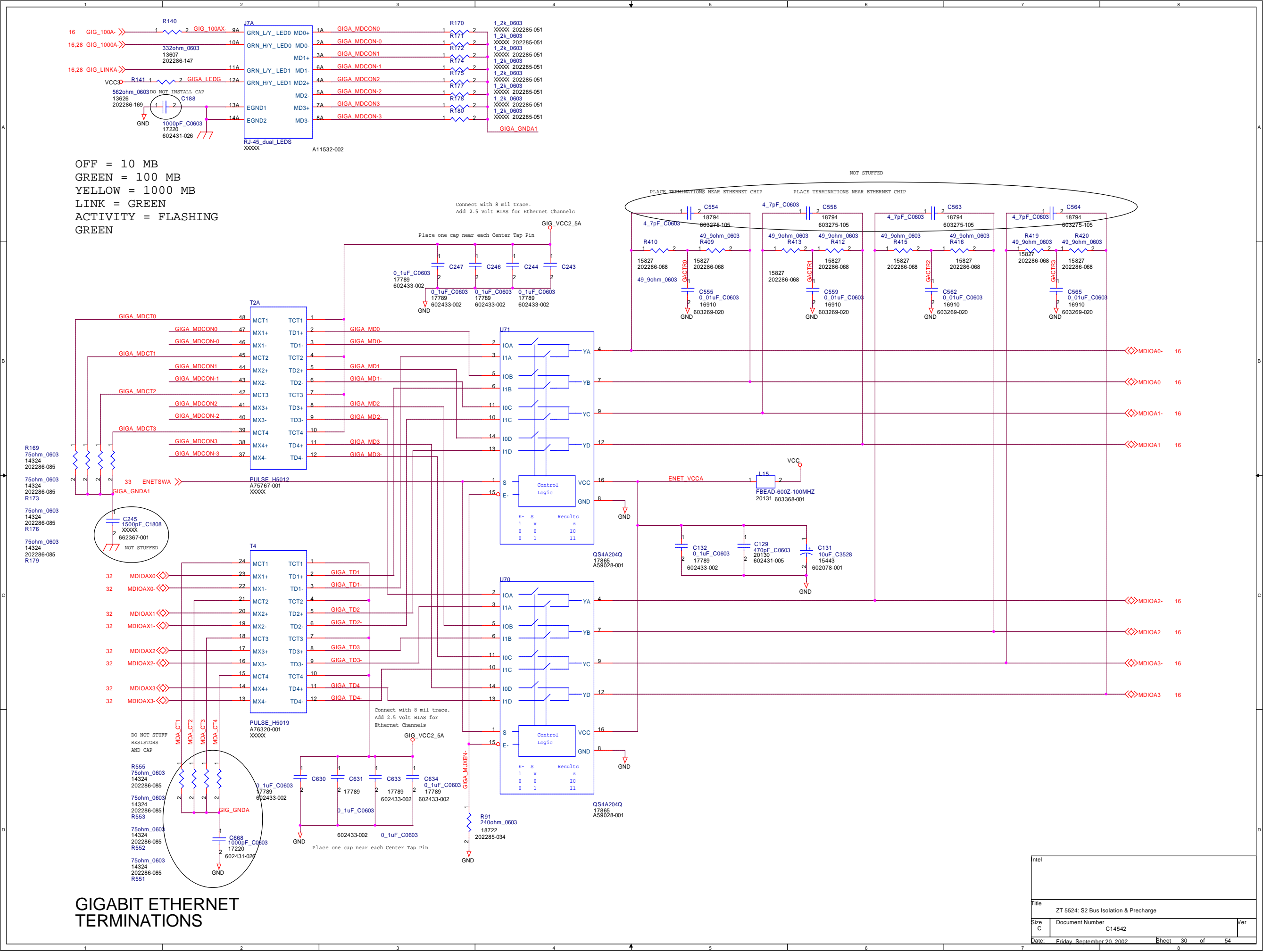


Intel		
Title		
ZT 5524: COMPACT PCI USER J4 CONNECTOR		
Size	Document Number	Ver
C	C14542	01
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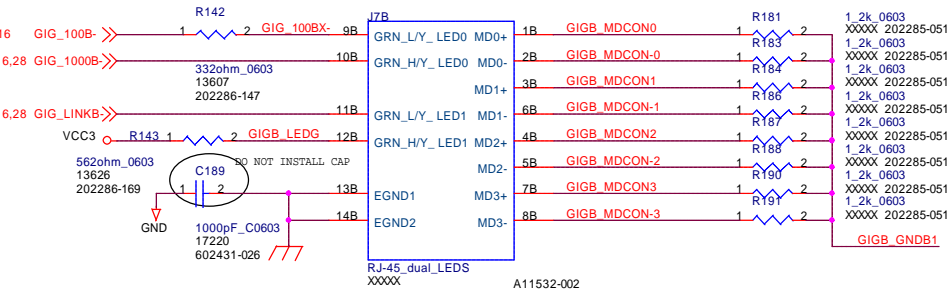




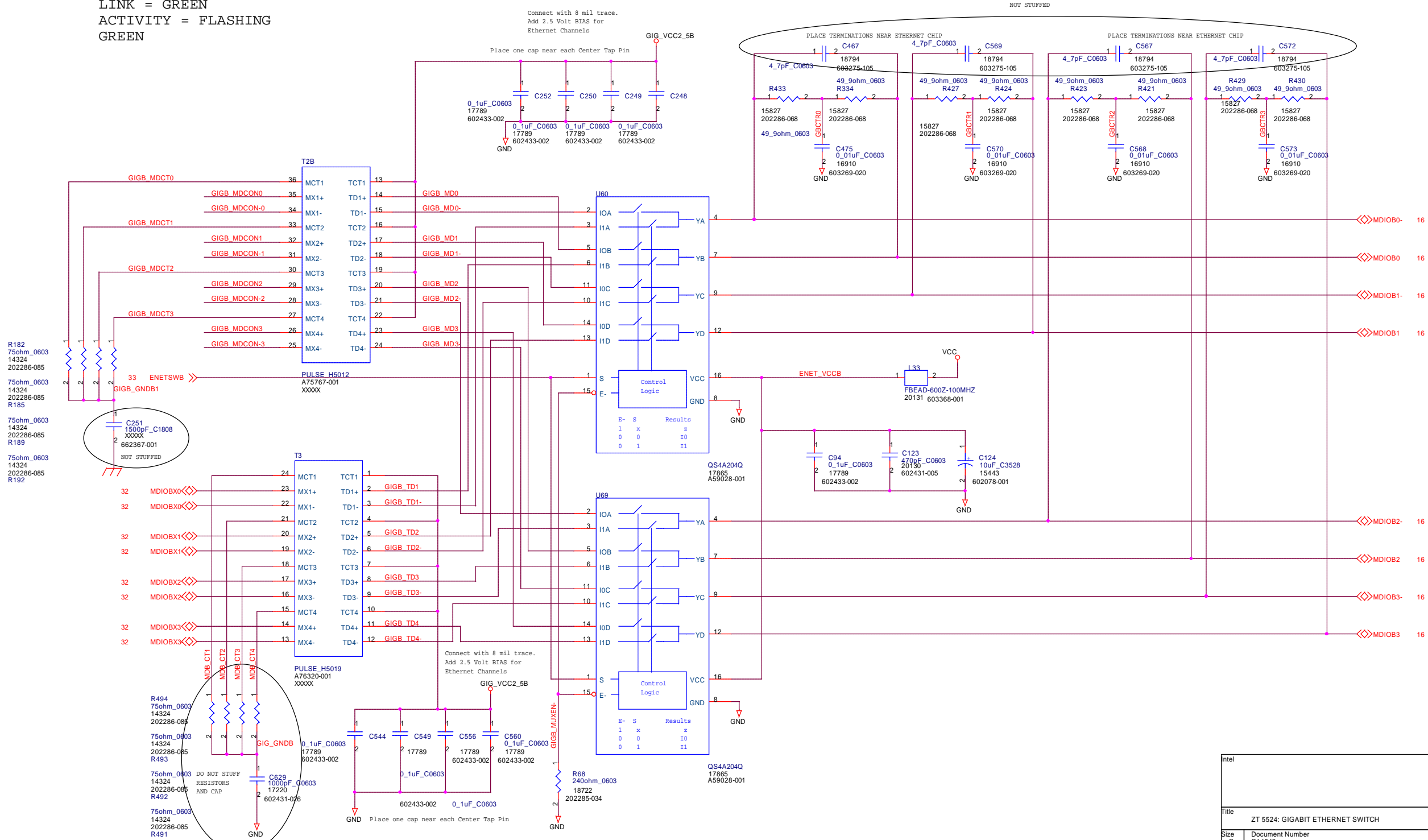


Intel		
Title		
ZT 5524: S2 Bus Isolation & Precharge		
Size	Document Number	Ver
C	C14542	
Date: Friday, September 20, 2002		Sheet 30 of 54



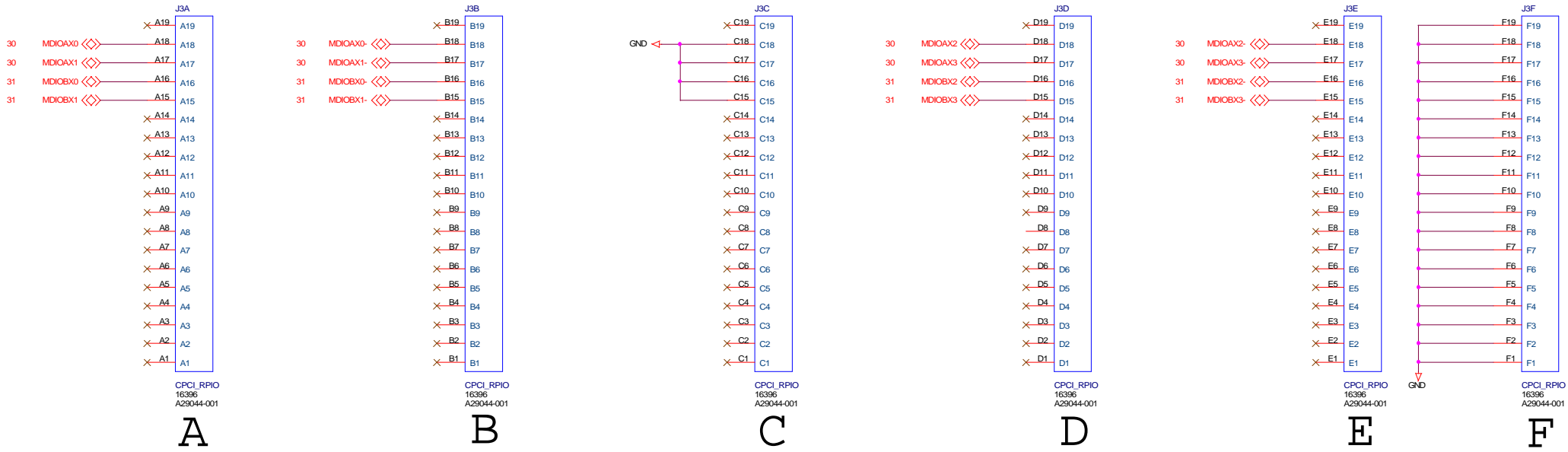


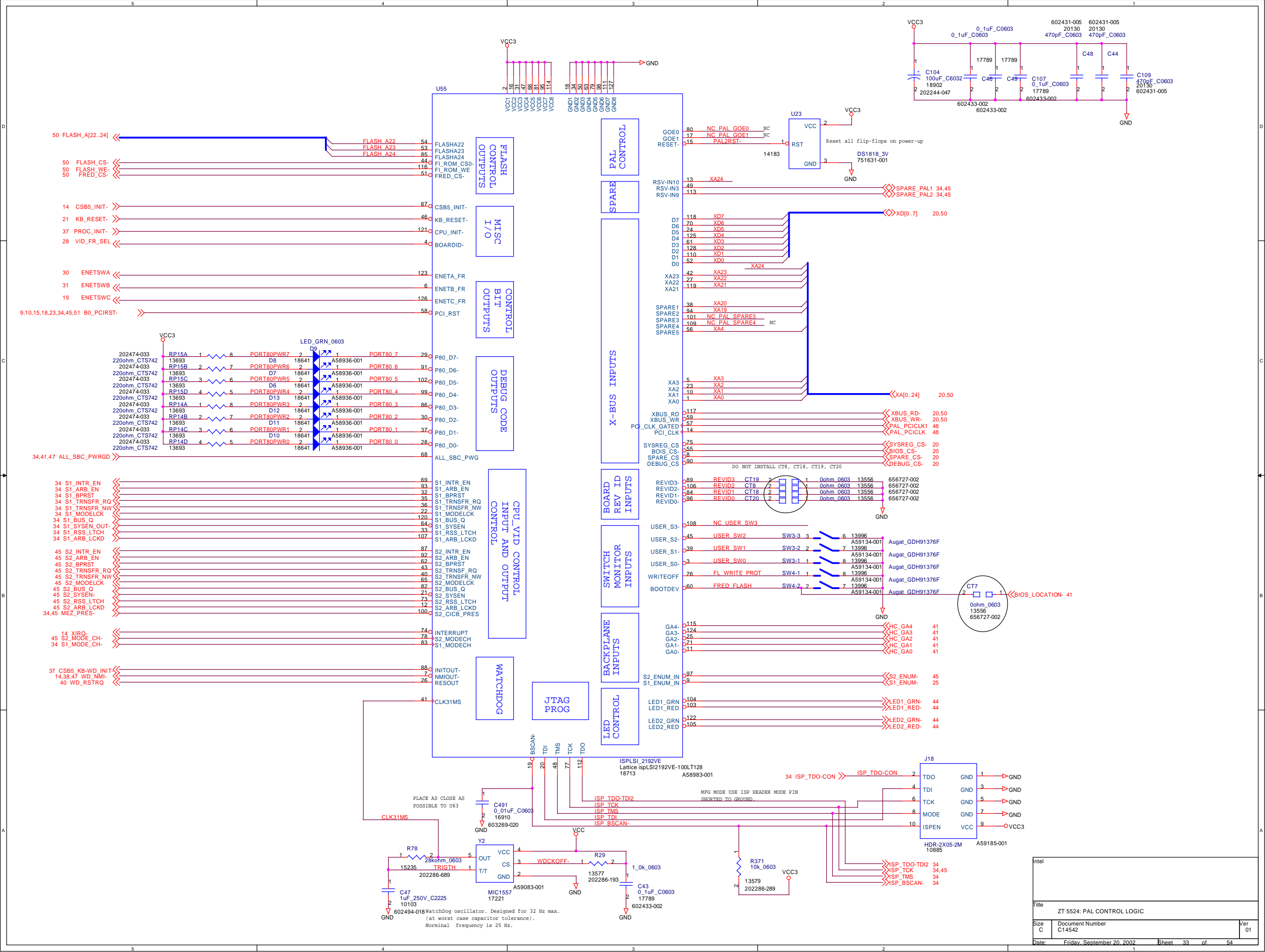
OFF = 10 MB  
GREEN = 100 MB  
YELLOW = 1000 MB  
LINK = GREEN  
ACTIVITY = FLASHING  
GREEN



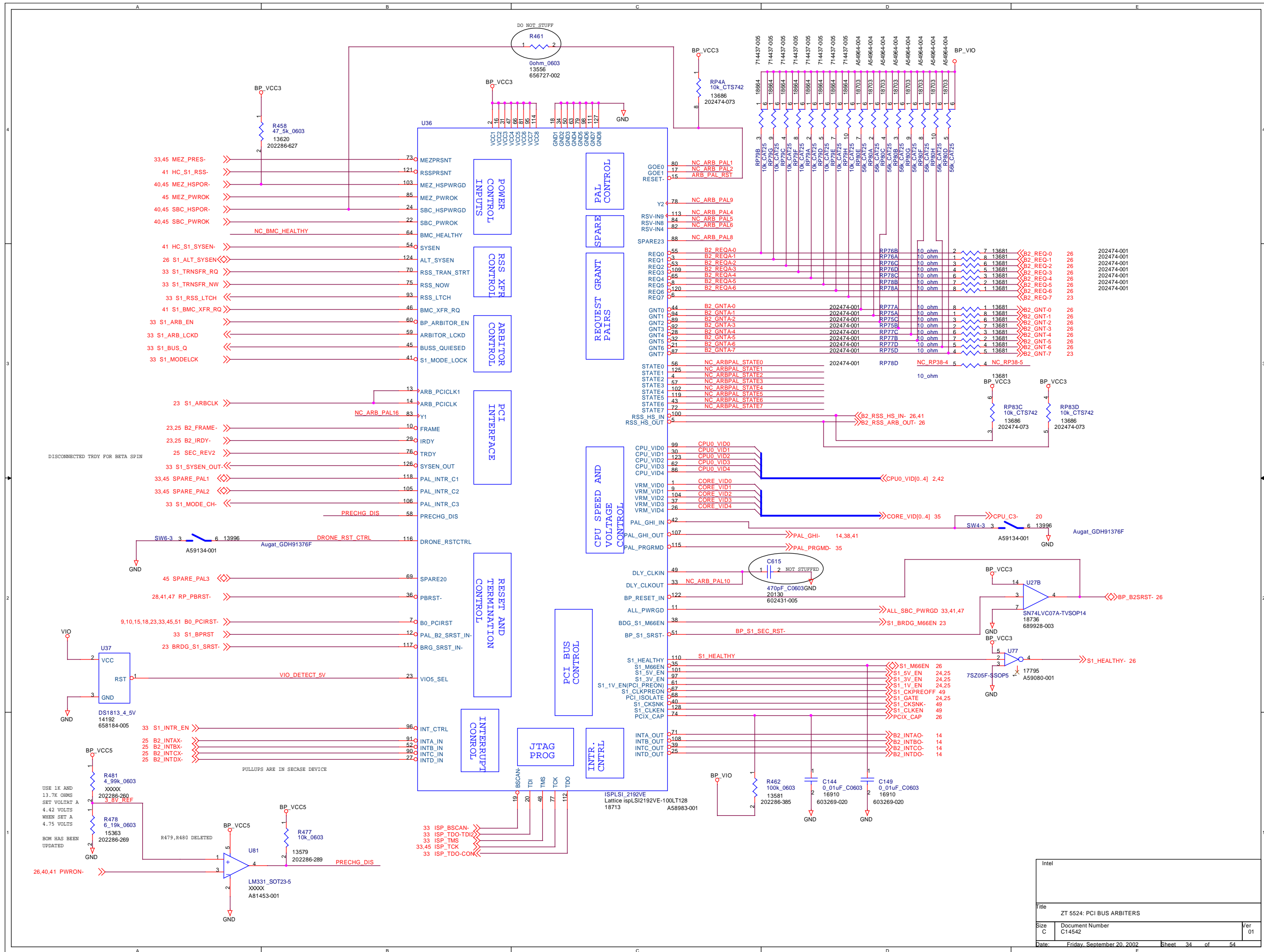
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Title		
ZT 5524: GIGABIT ETHERNET SWITCH		
Size	Document Number	Ver
C	C14542	01
Date:	Friday, September 20, 2002	Sheet 31 of 54

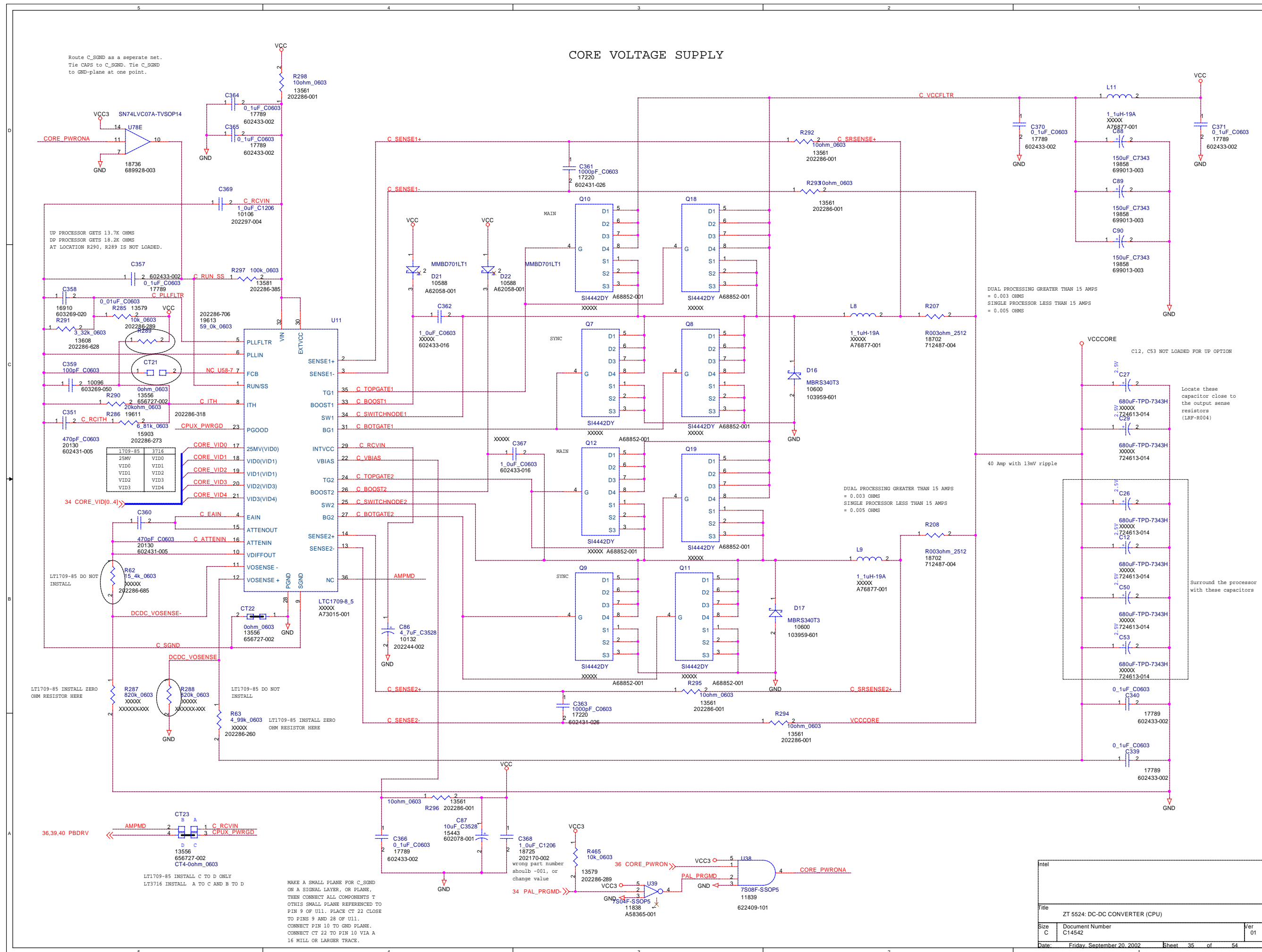
Backplane I/O 2mm Connector





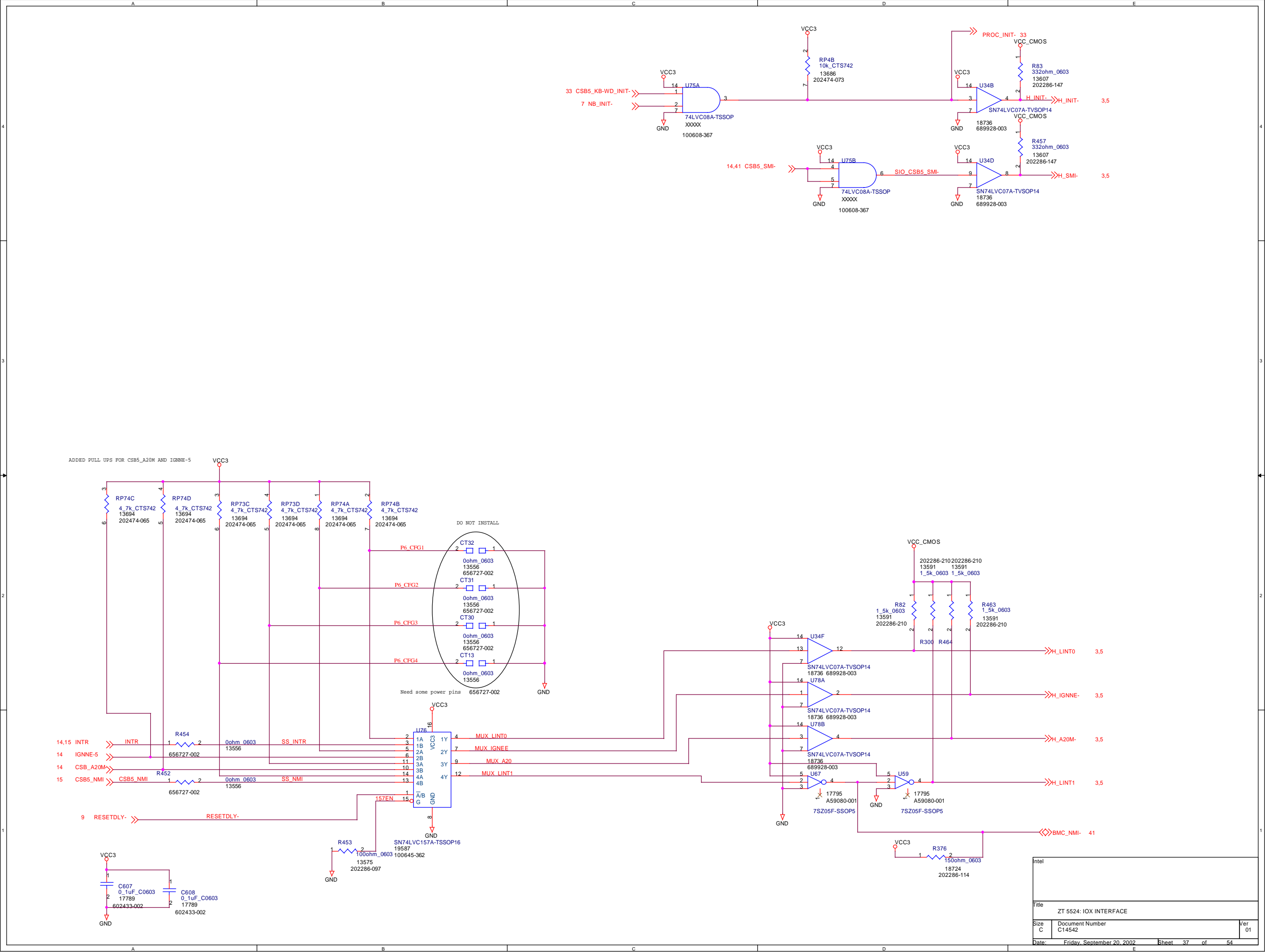
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Title		
ZT 5524: PAL CONTROL LOGIC		
Size	Document Number	Ver
C	C14542	01
Date: Friday, September 20, 2002		
Sheet 33 of 54		

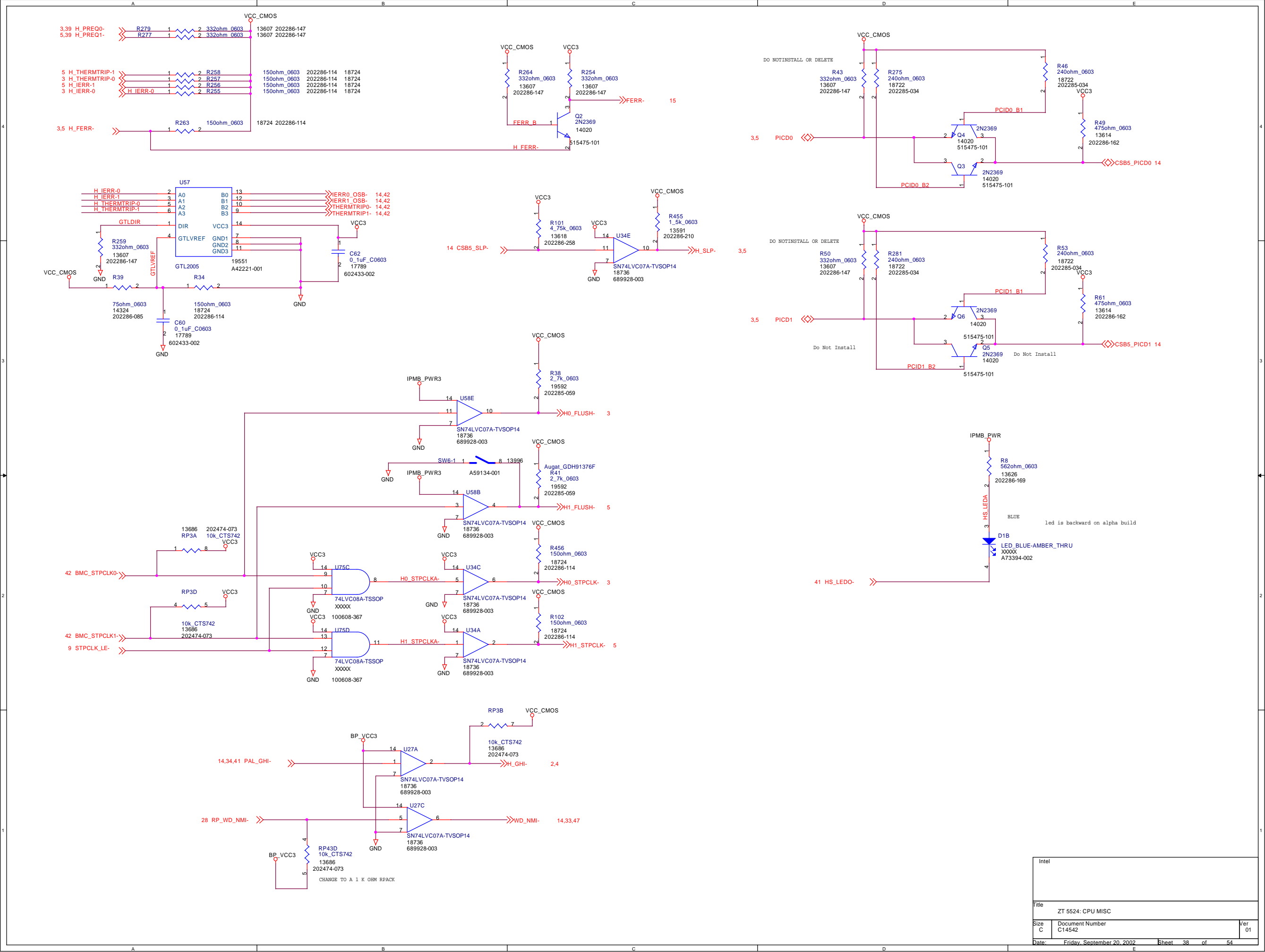


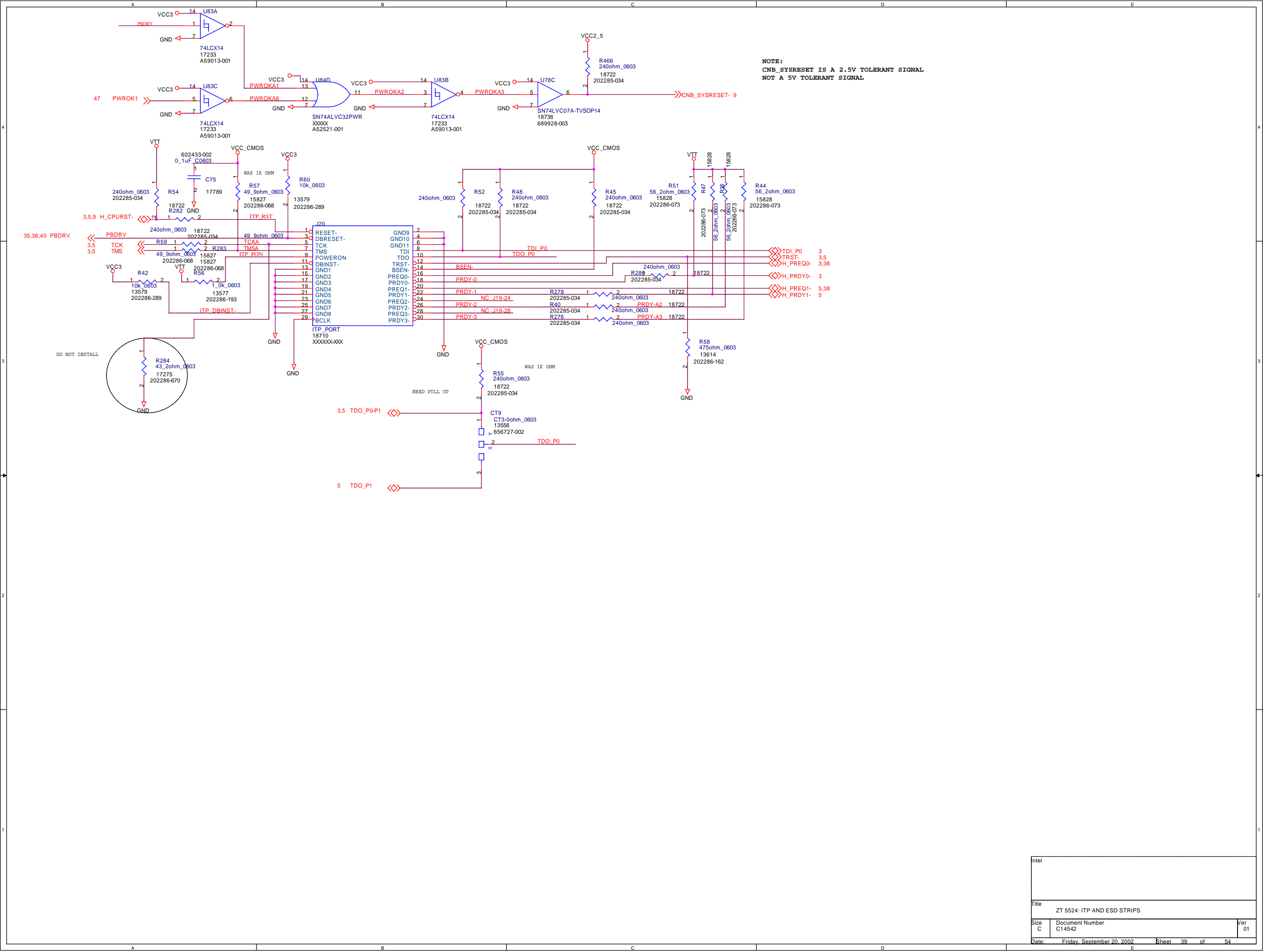




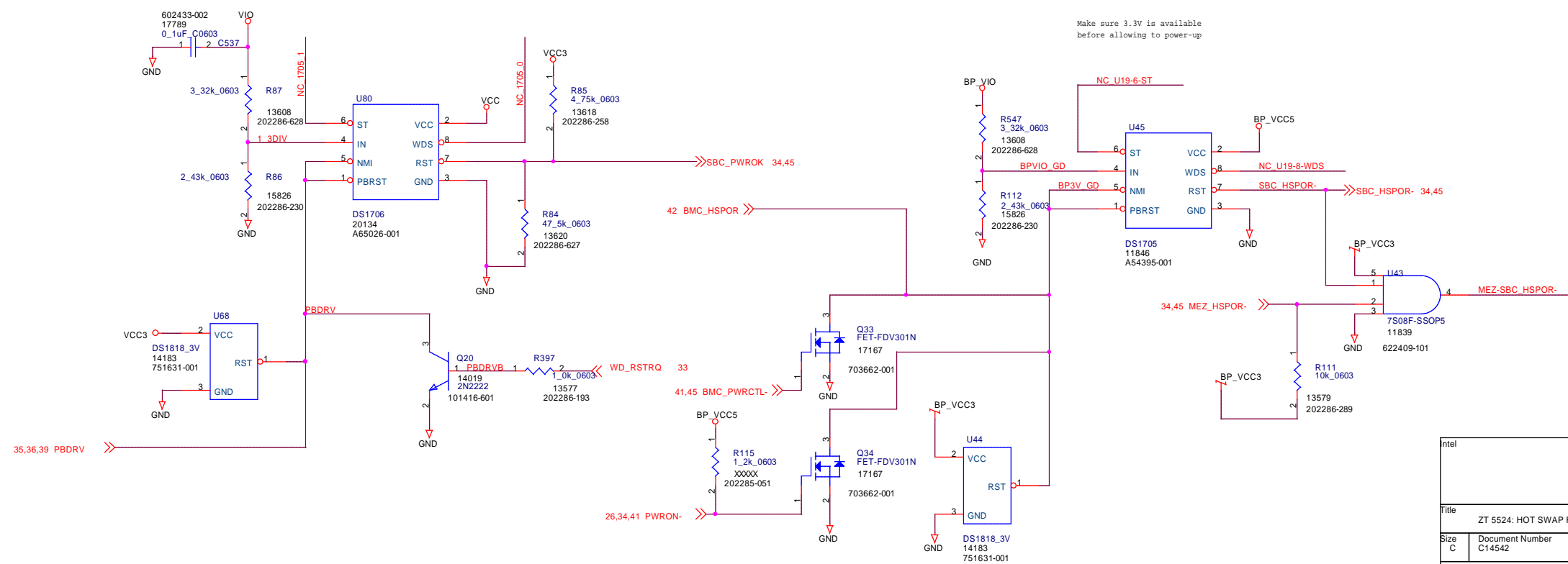
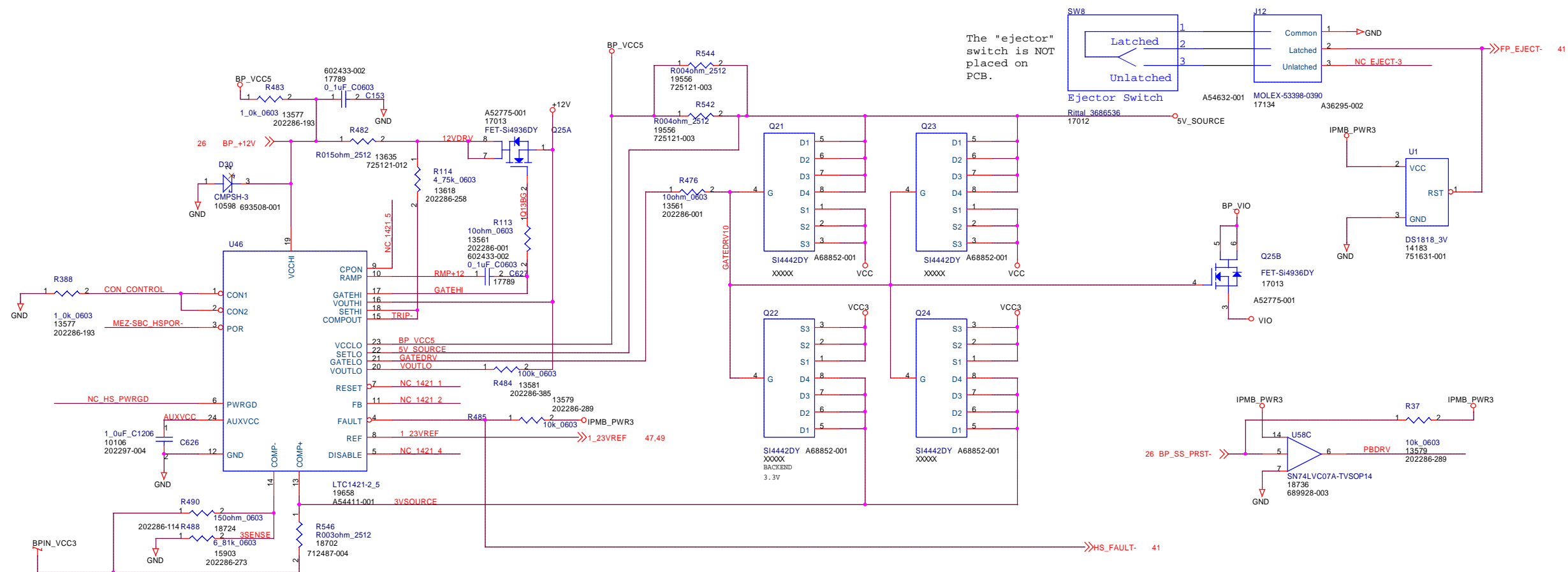








## Hot Swap Controller



To gain access to the Sahalee schematics, please contact your Intel representative regarding board licensing opportunities.

Intel		
Title ZT 5524:SAHALEE		
Size C	Document Number C14542	Ver 01
Date: Friday, September 20, 2002 Sheet 41 of 54		

To gain access to the Sahalee schematics, please contact your Intel representative regarding board licensing opportunities.

Intel		
Title ZT 5524:SAHALEE		
Size C	Document Number C14542	Ver 01
Date: Friday, September 20, 2002 Sheet 42 of 54		

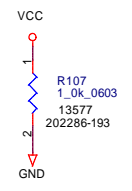
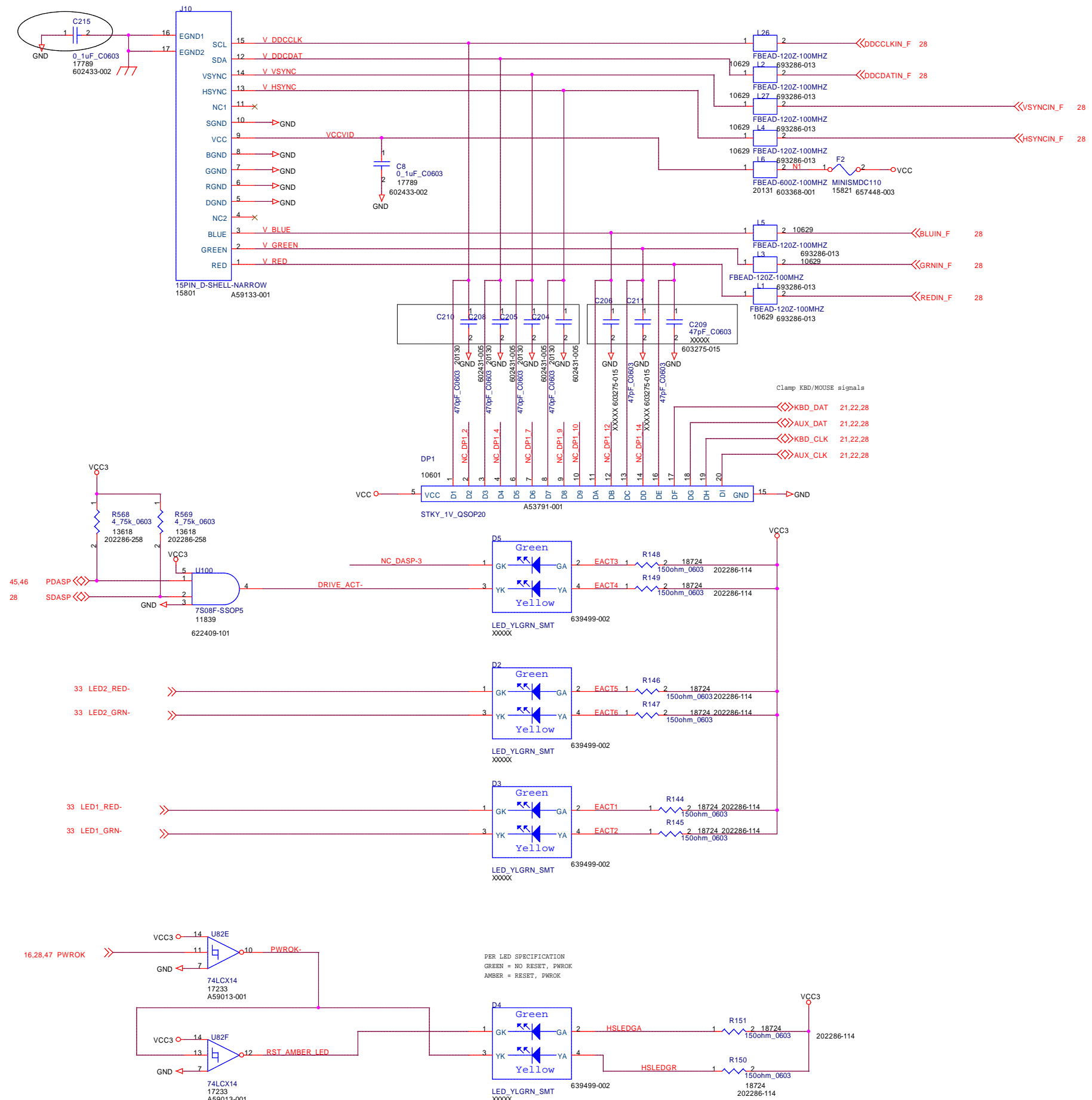


To gain access to the Sahalee schematics, please contact your Intel representative regarding board licensing opportunities.

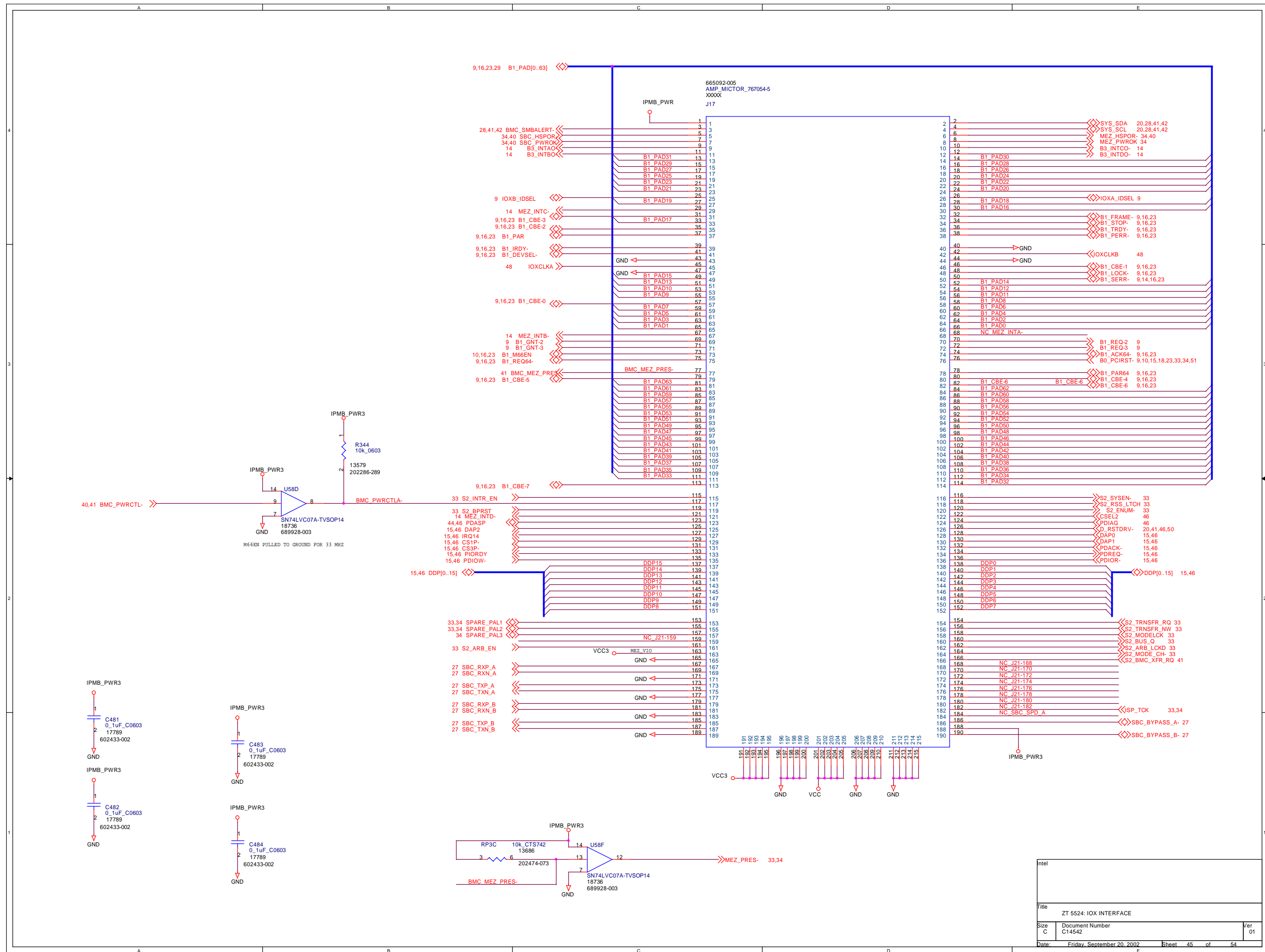
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Title ZT 5524:SAHALEE		
Size C	Document Number C14542	Ver 01
Date: Friday, September 20, 2002 Sheet 43 of 54		

VIDEO CONNECTOR

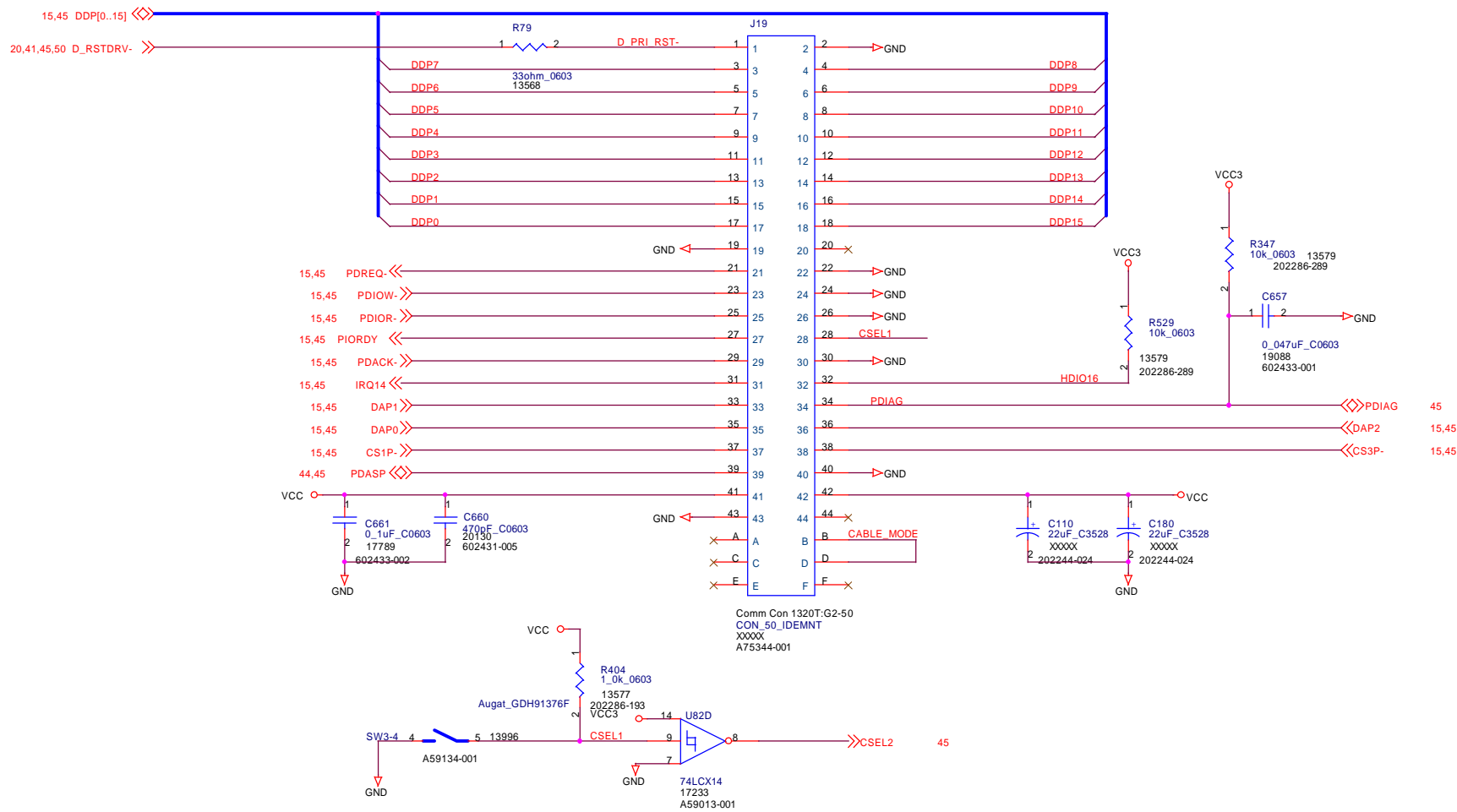
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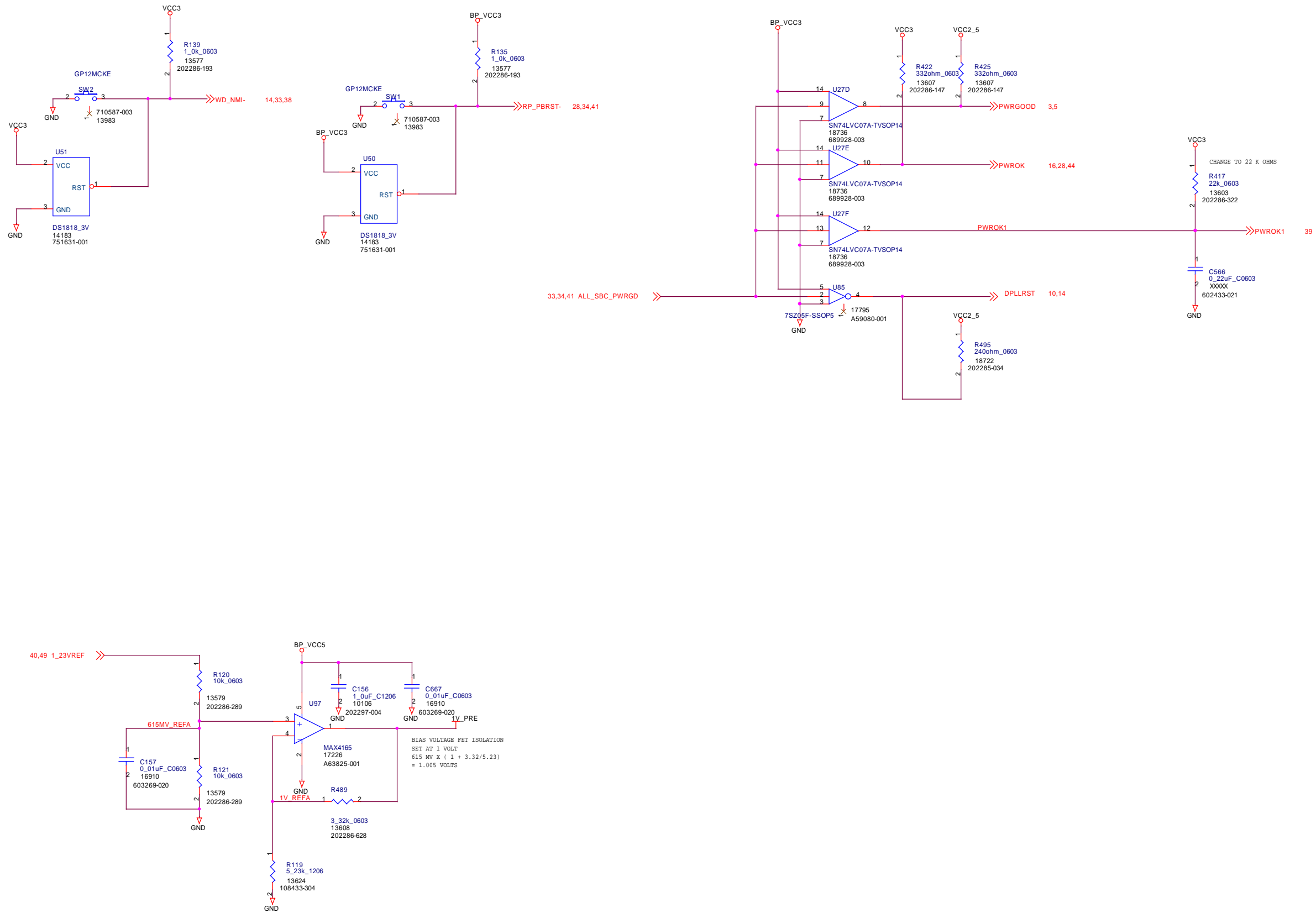
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Title		
ZT 5524: VIDEO CONN & LEDS		
Size	Document Number	Ver
C	C14542	01
Date: Friday, September 20, 2002 Sheet 44 of 54		



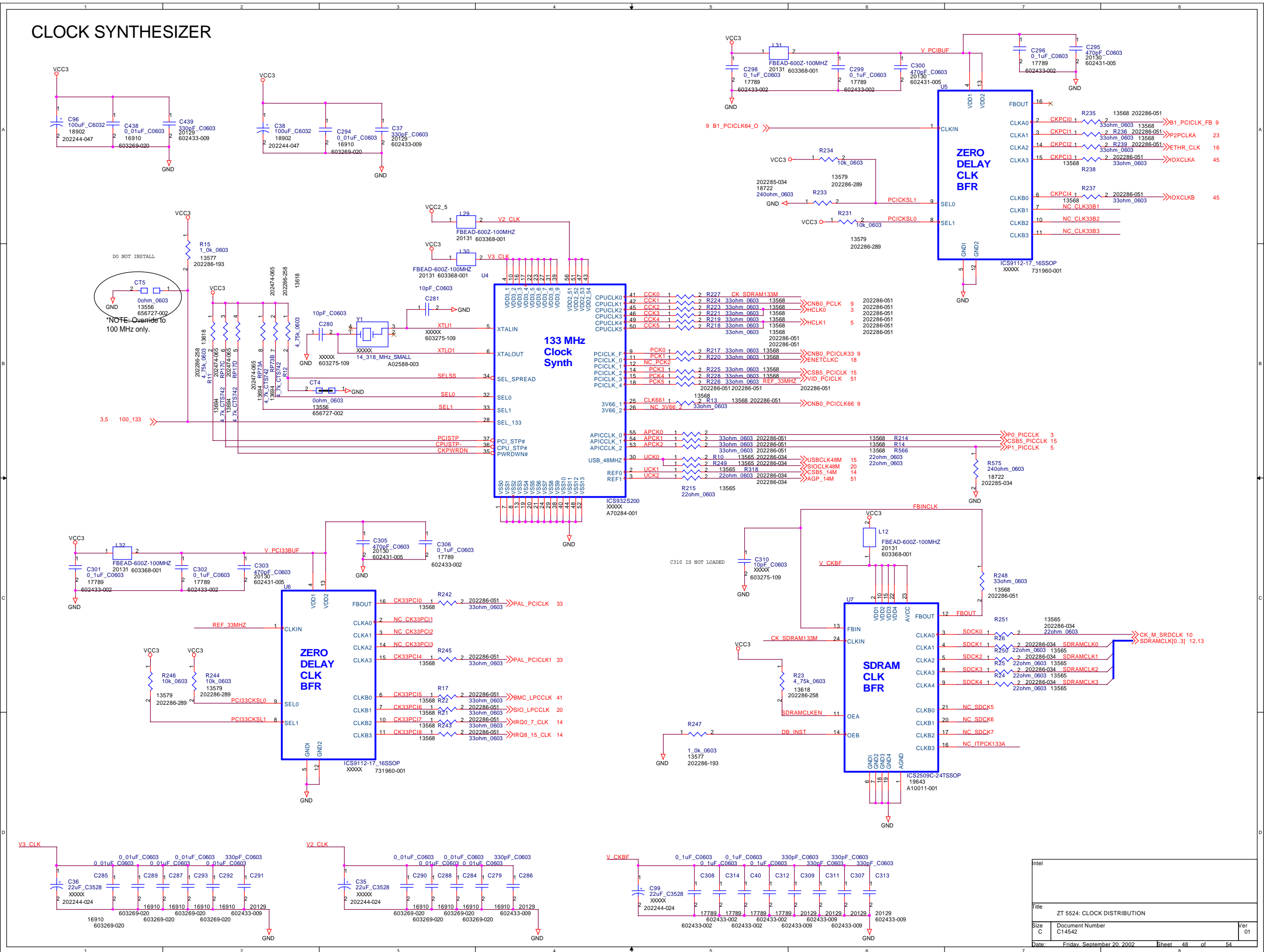
ONBOARD IDE INTERFACE



MISCELLANEOUS



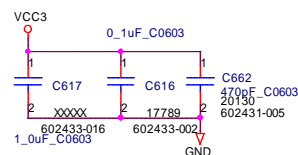
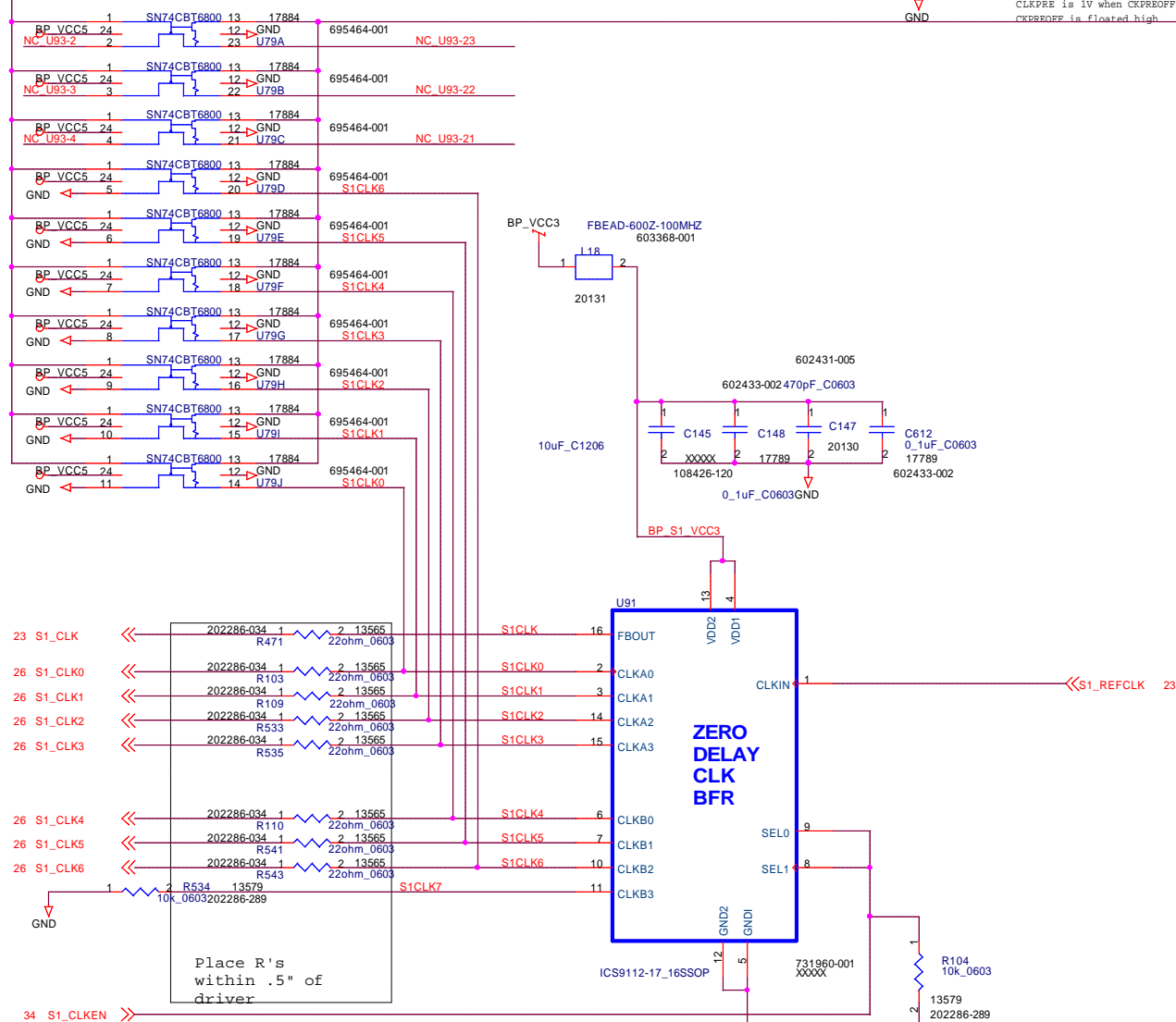
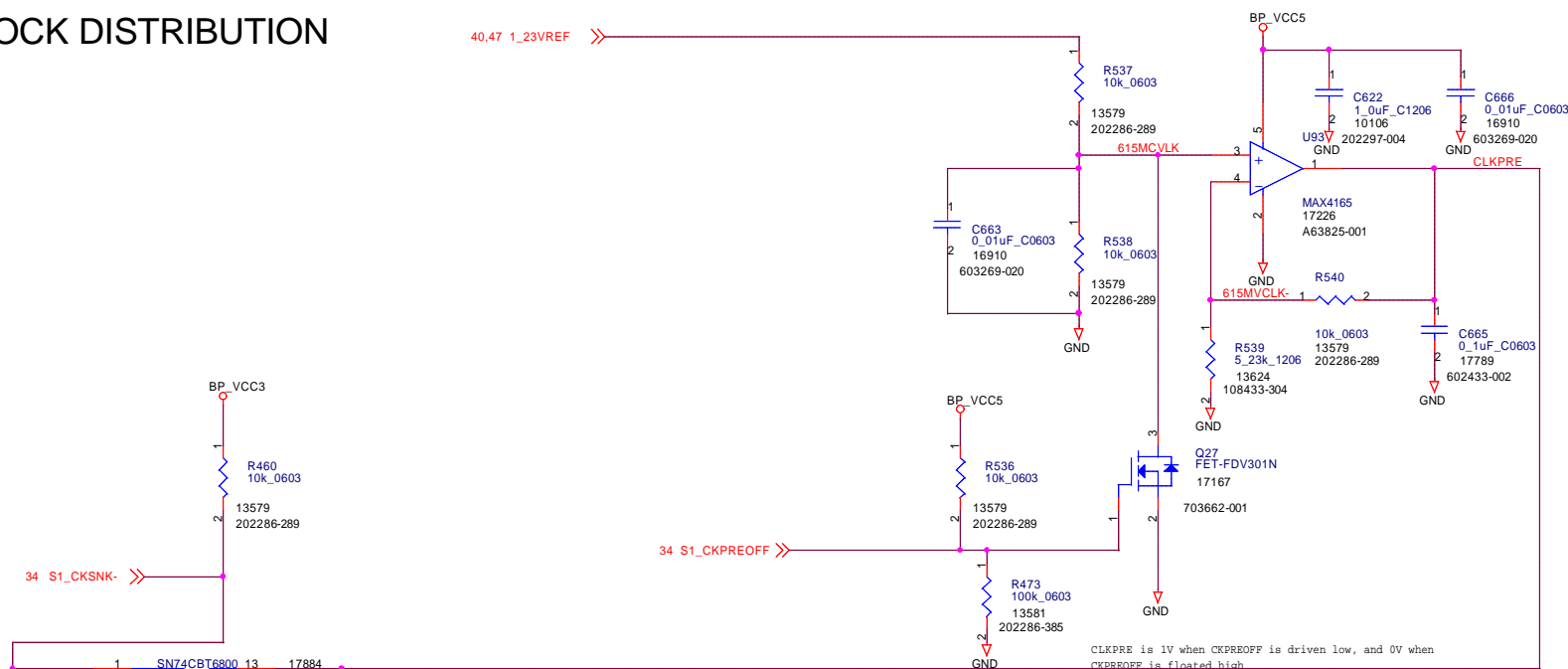
CLOCK SYNTHESIZER



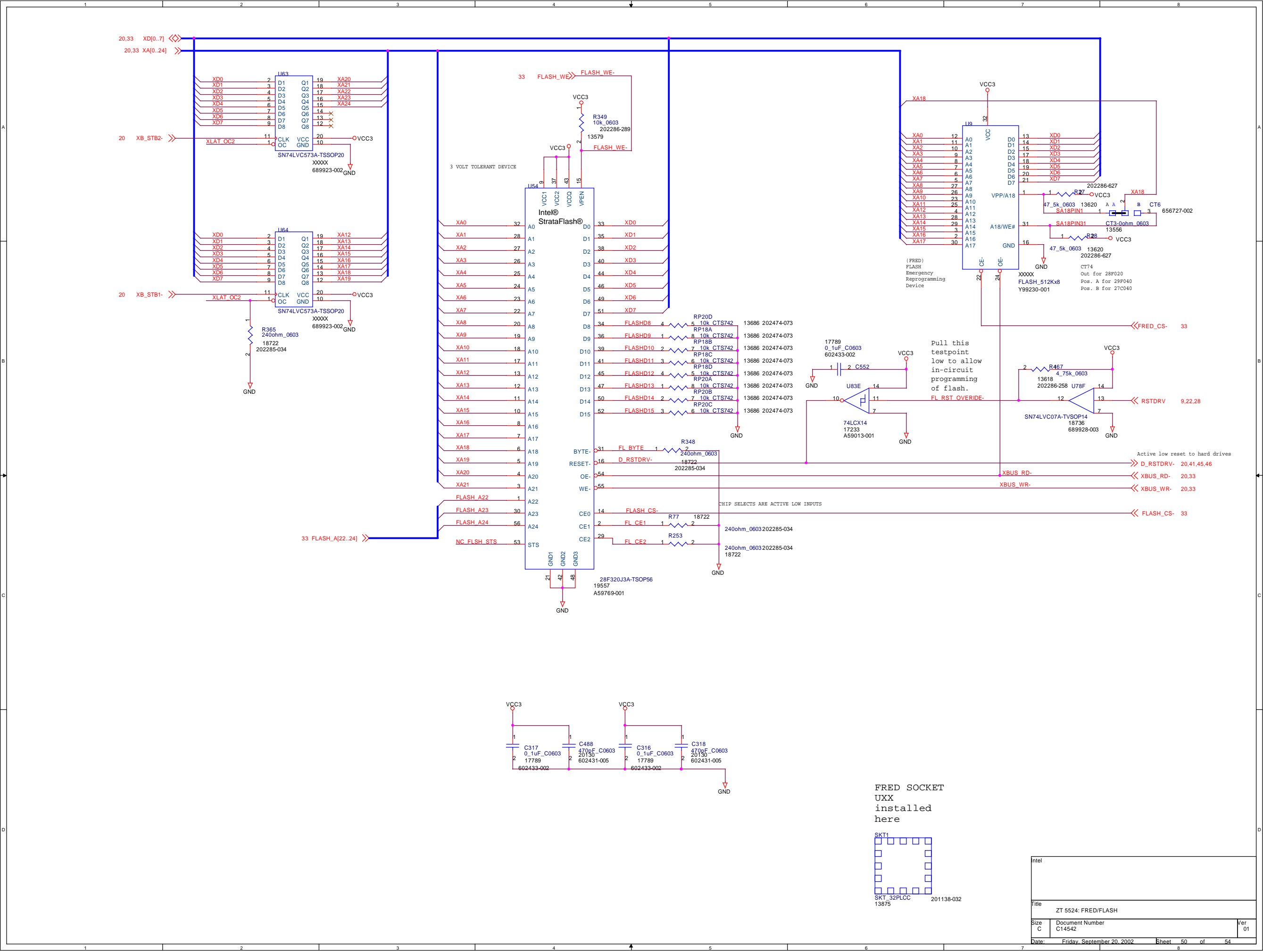
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ZT 5524: CLOCK DISTRIBUTION		
Size	Document Number	Ver
C	C14542	01
Date:	Friday, September 20, 2002	Sheet 48 of 54



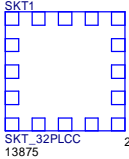
## CLOCK DISTRIBUTION



Intel		
Title ZT 5524: PCI BUS Clock Distribution		
Size C	Document Number C14542	Ver
Date: Friday, September 20, 2002	Sheet 49 of 54	

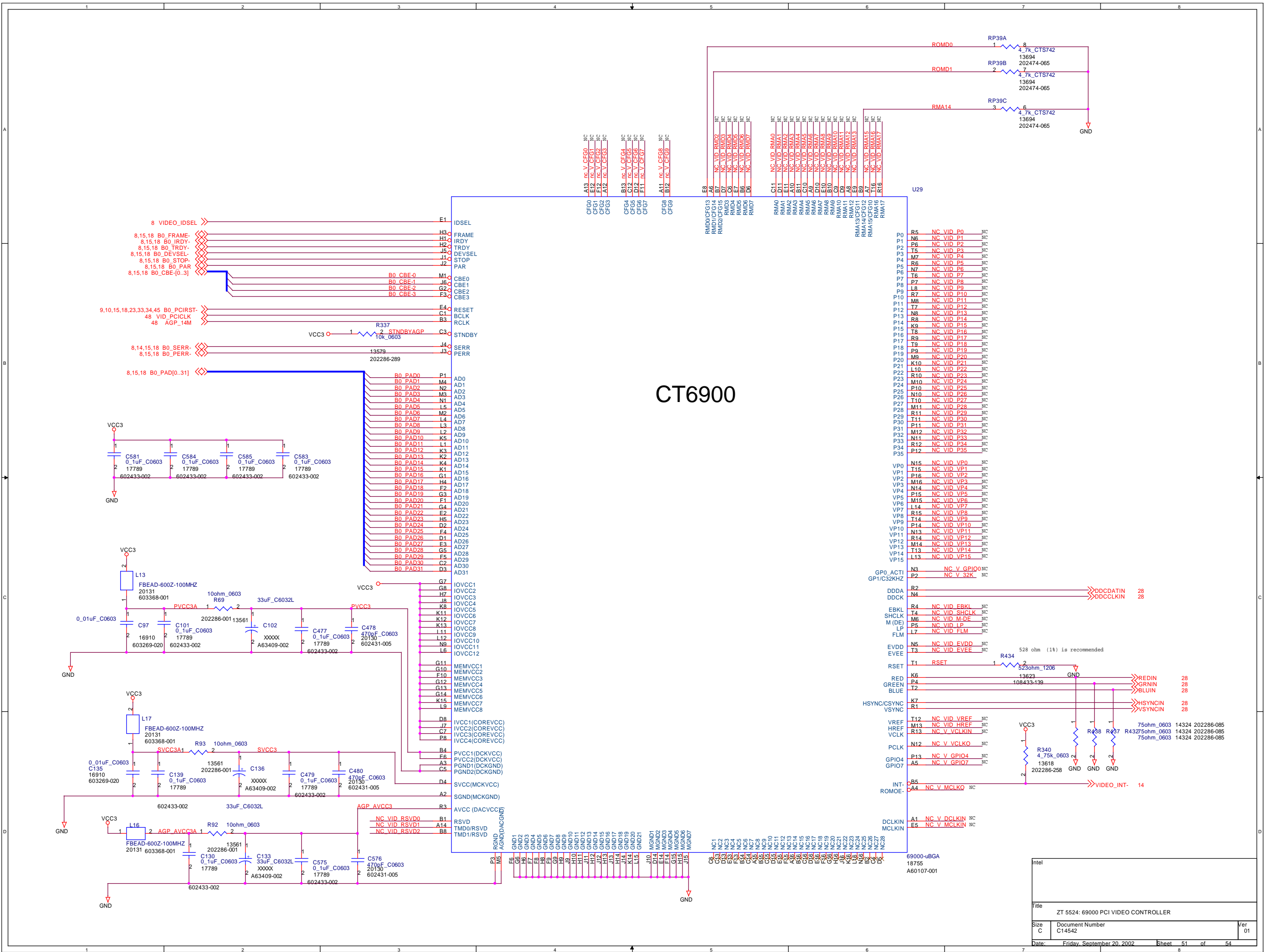


FRED SOCKET  
UXX  
installed  
here



Intel		
Title		
ZT 5524: FRED/FLASH		
Size	Document Number	Ver
C	C14542	01
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CT6900



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RP13B	6	RP29F	6	RP47F	29	RP69B	14	RP69F	14	R90	10	R190	31	R290	35	R390	10				
RP13C	6	RP29G	6	RP47G	29	RP69C	14	RP69G	14	R91	30	R191	31	R291	35	R391	9				
RP13D	6	RP29H	6	RP47H	29	RP69D	14	RP69H	14	R92	51	R192	31	R292	35	R392	9				
RP13E	6	RP30A	9	RP48A	9	RP70A	15	RP91A	14	R93	51	R193	12	R293	35	R393	10				
RP13F	6	RP30B	9	RP48B	9	RP70B	15	RP91B	14	R94	28	R194	13	R294	35	R394	9				
RP13G	6	RP30C	9	RP48C	9	RP70C	15	RP91C	14	R95	28	R195	13	R295	35	R395	36				
RP13H	6	RP30D	9	RP48D	9	RP70D	15	RP91D	14	R96	28	R196	13	R296	35	R396	9				
RP14A	33	RP30E	9	RP48E	9	RP71A	15	RP91E	14	R97	21	R197	12	R297	35	R397	40				
RP14B	33	RP30F	9	RP48F	9	RP71B	15	RP91F	14	R98	39	R198	13	R298	35	R398	9				
RP14C	33	RP30G	9	RP48G	9	RP71C	15	RP91G	14	R99	26	R199	12	R299	20	R399	9				
RP14D	33	RP30H	9	RP48H	9	RP71D	15	RP91H	14	R100	26	R200	13	R300	37	R400	36				
RP15A	33	RP31A	9	RP49A	8	RP72A	15	R1	19	R101	38	R201	4	R301	9	R401	36				
RP15B	33	RP31B	9	RP49B	8	RP72B	15	R2	19	R102	38	R202	4	R302	8	R402	36				
RP15C	33	RP31C	9	RP49C	8	RP72C	15	R3	41	R103	49	R203	4	R303	9	R403	36				
RP15D	33	RP31D	9	RP49D	8	RP72D	15	R4	41	R104	49	R204	4	R304	9	R404	46				
RP16A	6	RP31E	9	RP49E	8	RP73A	48	R5	5	R105	26	R205	5	R305	10	R405	36				
RP16B	6	RP31F	9	RP49F	8	RP73B	48	R6	5	R106	26	R206	4	R306	10	R406	36				
RP16C	6	RP31G	9	RP49G	8	RP73C	37	R7	5	R107	26	R207	35	R307	9	R407	36				
RP16D	6	RP31H	9	RP49H	8	RP73D	37	R8	38	R108	26	R208	35	R308	10	R408	36				
RP16E	6	RP32A	17	RP50A	14	RP74A	37	R9	4	R109	49	R209	36	R309	9	R409	30				
RP16F	6	RP32B	17	RP50B	8	RP74B	37	R10	48	R110	49	R210	36	R310	9	R410	30				
RP16G	6	RP32C	17	RP50C	8	RP74C	37	R11	48	R111	40	R211	10	R311	9	R411	36				
RP16H	6	RP32D	17	RP50D	8	RP74D	37	R12	48	R112	40	R212	10	R312	9	R412	30				
RP17A	8	RP33A	17	RP51A	8	RP75A	34	R13	48	R113	40	R213	10	R313	9	R413	30				
RP17B	8	RP33B	17	RP51B	8	RP75B	34	R14	48	R114	40	R214	48	R314	10	R414	18				
RP17C	48	RP33C	17	RP51C	8	RP75C	34	R15	48	R115	40	R215	48	R315	10	R415	30				
RP17D	48	RP33D	17	RP51D	8	RP75D	34	R16	48	R116	26	R216	10	R316	10	R416	30				
RP18A	50	RP34A	17	RP51E	8	RP76A	34	R17	48	R117	26	R217	48	R317	10	R417	47				
RP18B	50	RP34B	17	RP51F	8	RP76B	34	R18	17	R118	26	R218	48	R318	48	R418	29				
RP18C	50	RP34C	17	RP51G	8	RP76C	34	R19	48	R119	47	R219	48	R319	16	R419	30				
RP18D	50	RP34D	17	RP51H	8	RP76D	34	R20	48	R120	47	R220	48	R320	11	R420	30				
RP19A	43	RP35A	17	RP52A	17	RP77A	34	R21	48	R121	47	R221	48	R321	11	R421	31				
RP19B	43	RP35B	17	RP52B	17	RP77B	34	R22	48	R122	11	R222	11	R322	11	R422	47				
RP19C	43	RP35C	17	RP52C	17	RP77C	34	R23	48	R123	15	R223	48	R323	11	R423	31				
RP19D	43	RP35D	17	RP52D	17	RP77D	34	R24	48	R124	22	R224	48	R324	11	R424	31				
RP20A	50	RP36A	41	RP53A	17	RP78A	34	R25	48	R125	22	R225	48	R325	16	R425	47				

[illegible]